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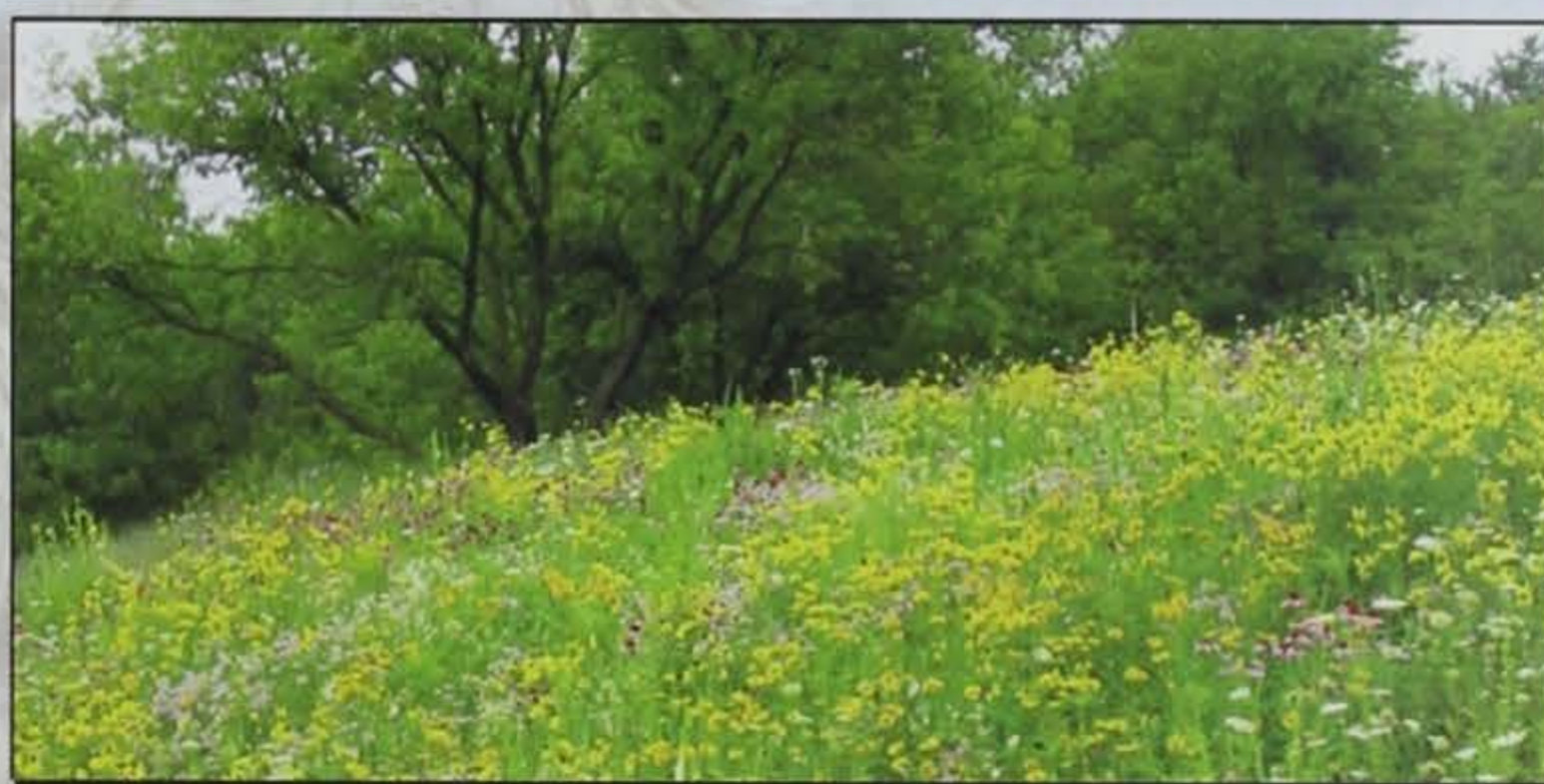
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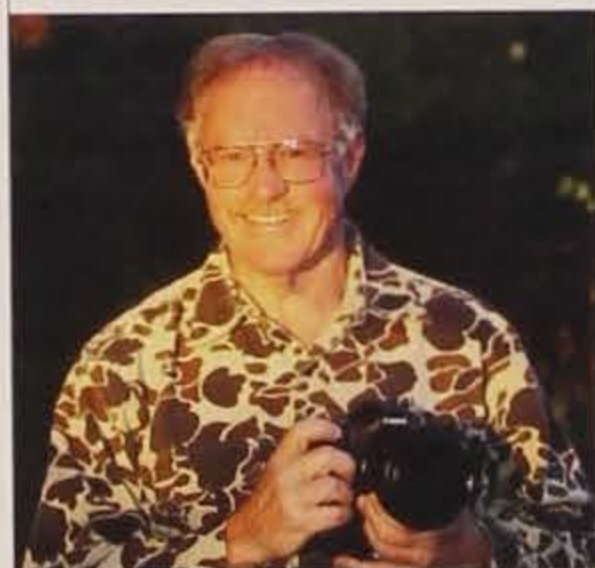
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To conserve and enhance our natural resources in cooperation with individuals and organizations to improve the quality of life for Iowans and ensure a legacy for future generations.

EDITORIAL MISSION

We strive to open the door to the beauty and uniqueness of Iowa's natural resources, inspire people to get outside and experience Iowa and to motivate outdoor-minded citizens to understand and care for our natural resources.

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ABOUT THIS PHOTO

Urbandale freelance photographer Ty Smedes, well known for his birding passion, encountered this ovenbird warbler on a central Iowa wetland. The ovenbird is named for its ground nest, which with its domed top and side entrance, resembles a Spanish horno clay oven. A common spring migrating visitor, ovenbirds are observed statewide. Use the tips on page 30 to find it and a range of other warblers.

ABOUT THE COVER PHOTO

"It was a photographer's dream come true," recalls Clay Smith of his work to chronicle author Jen Wilson's *Lost in Iowa* look at the Father of Waters aboard the *Twilight* riverboat. With perfect weather and endless photo opportunities, "It was like shooting fish in a barrel," says the *Iowa Outdoors* staff photographer. Soak up this travel story, then get aboard to take your own images of the Upper Mississippi River.



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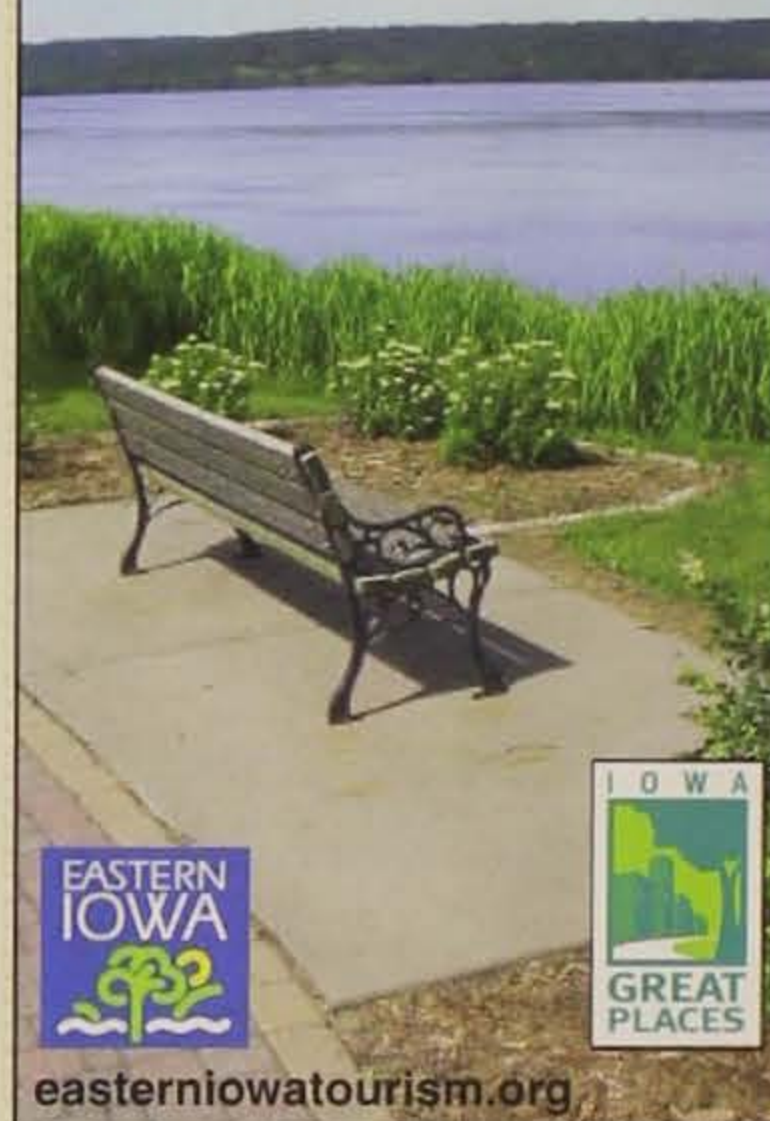


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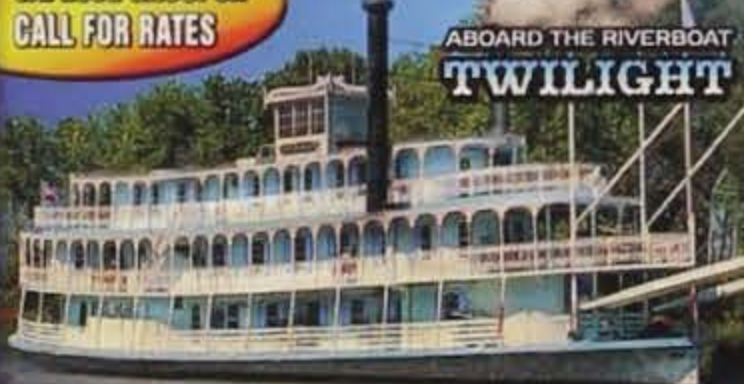


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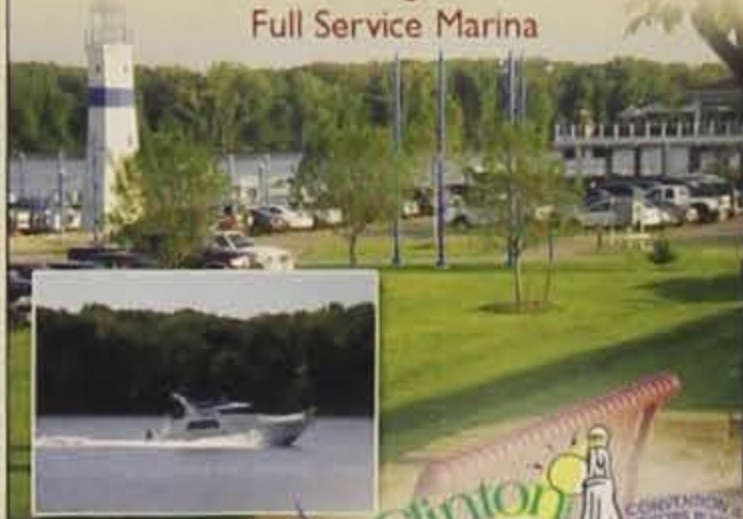


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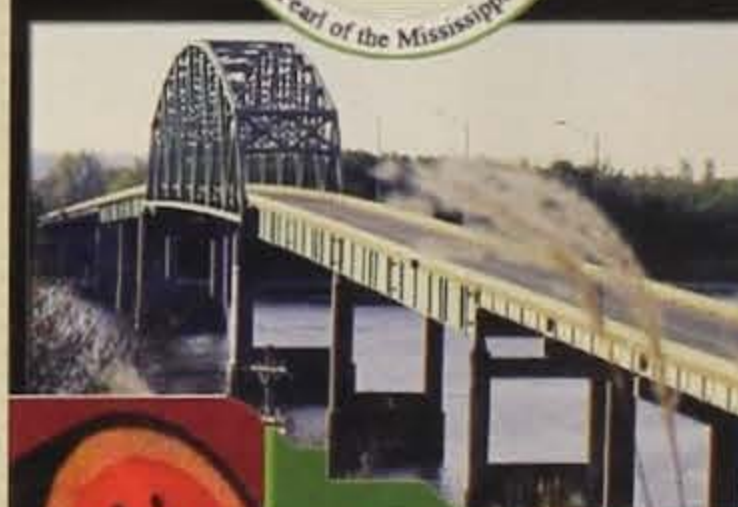
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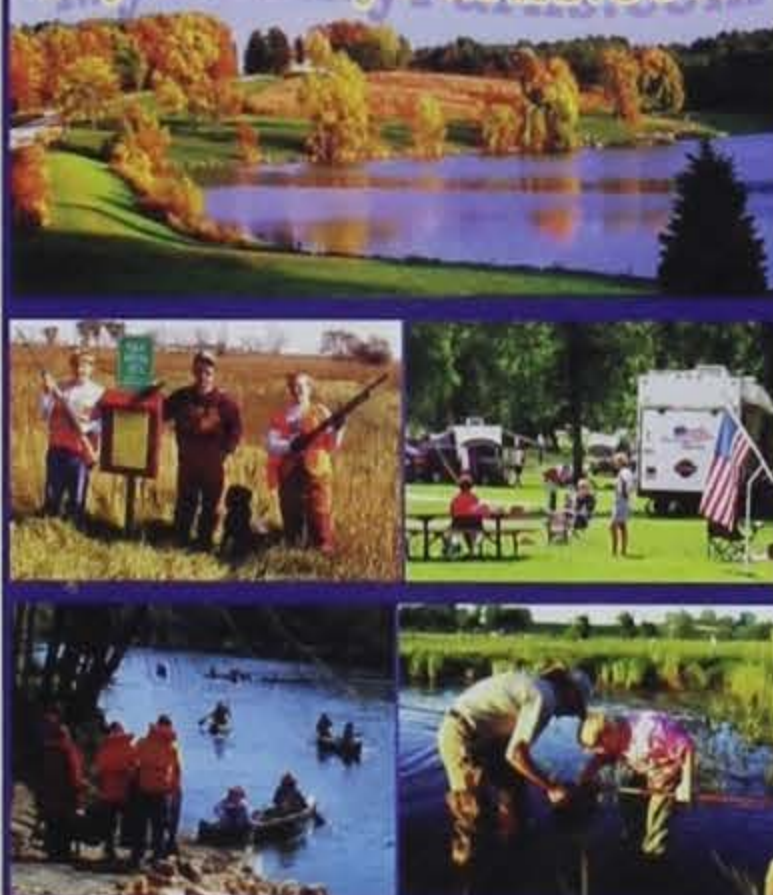
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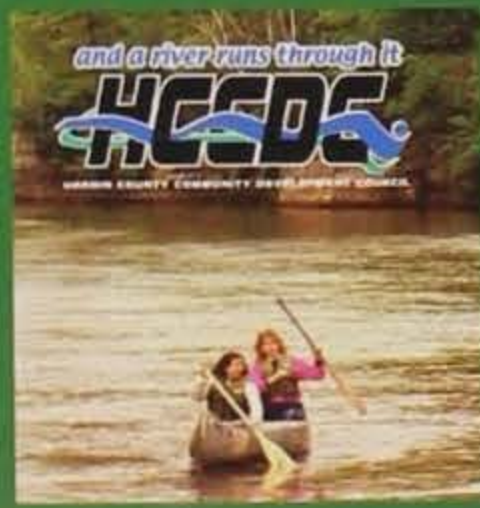
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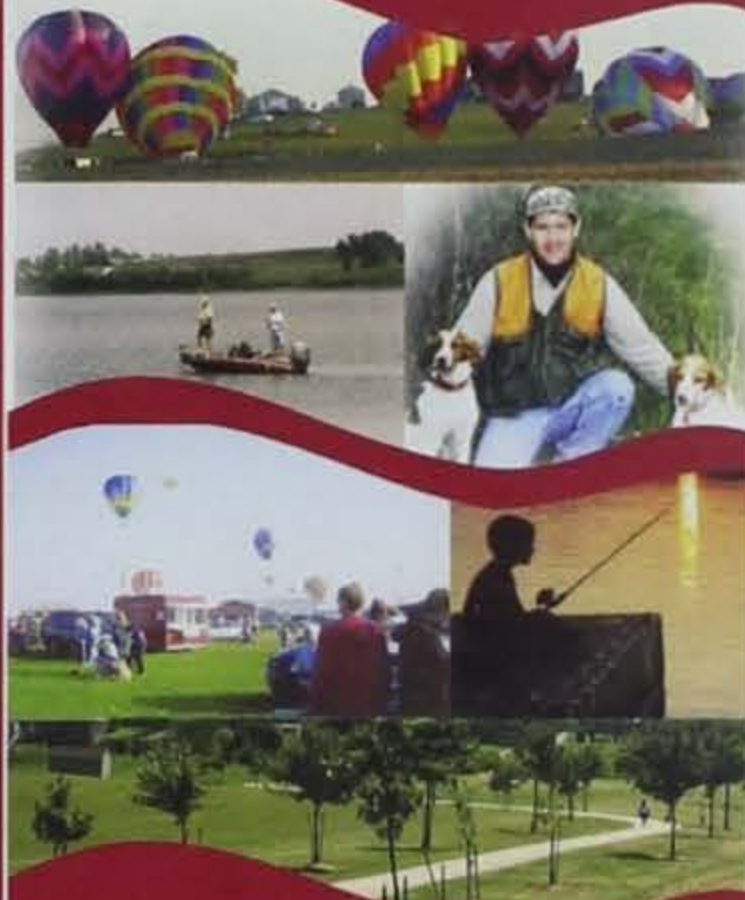
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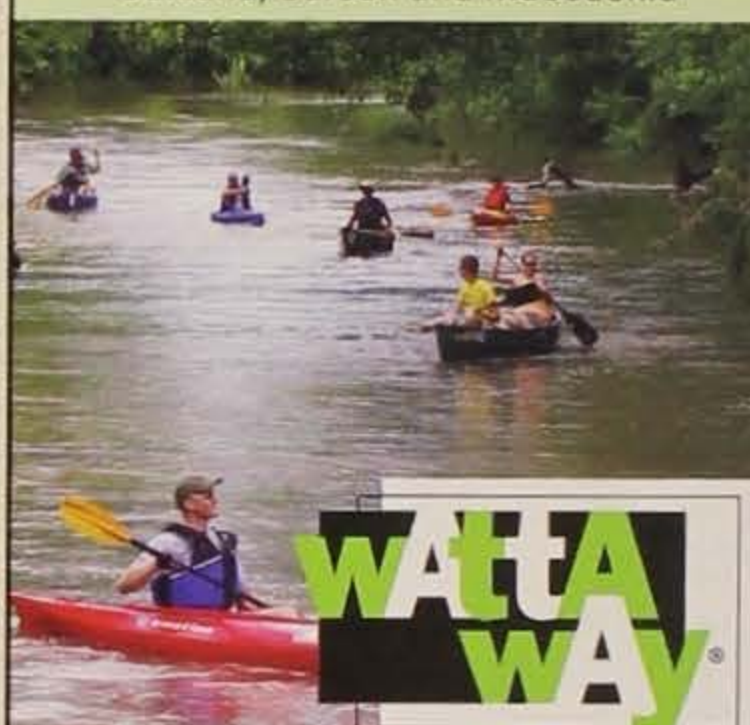


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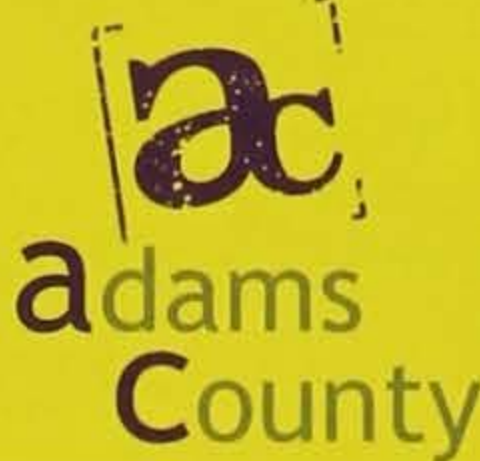
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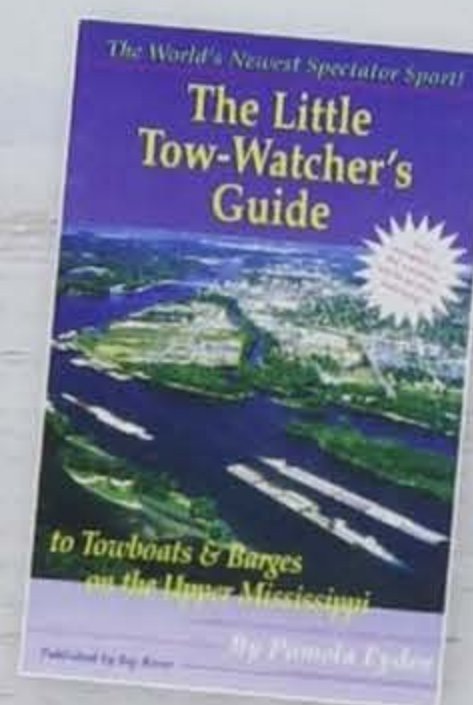







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The Roy E. Claverie, a twin-screw, 5,600 horsepower tow built in 1981, plies the waters near Bellevue. The tow is owned by the Ingram Barge Company of Nashville, Tenn.



Ship Watching on Old Man River

Hit the river this summer well-armed with a new guidebook to the towboats pushing barges up and down the Mighty Mississippi to one of the largest ports in the world at LaPlace, La.

"It's kind of a combination of bird watching and train spotting," says Reggie McLeod of *Big River* magazine, which publishes the booklet *The Little Tow-Watcher's Guide to Towboats and Barges on the Upper Mississippi*. "Some people get quite passionate about it, even running to get their binoculars upon hearing a boat in the middle of the night," he says.

Perfect for the glove compartment, boat or tackle box, the guide contains maps, photos and fun facts to keep occupied while driving the Great River Road, hiking a state park above the river or fishing the exalted waterway.

Moving everything from Iowa grain to Quad Cities scrap steel, the 250 tows that pass through the Upper Mississippi are listed alphabetically in the booklet for reference. Some work the area continuously, while others only pass through once from the Lower Mississippi. Each entry contains the date built (the earliest tow is the twin-screw Indian Princess built in 1940), the number of propellers, engine horsepower, previous names and owners, and base of operations. Below each entry, users can note when that tow was spotted and if it was headed

up river or down and how many barges it was pushing. Keep a tally to see how many you can spot.

Learn where to hang out to observe the trickiest navigation hazards, which in Iowa waters, include the locks at Keokuk, Dubuque and Clinton, the railroad bridges at Sabula and Fort Madison, and other hazards. Watching multi-thousand horsepower tows push barges three football fields long through narrow bridge spans at angles to the curve of the scenic river invokes awe. Add to the challenge that some channels are 10 feet deep and a barge can easily draw nearly all that depth. One river bridge at Morris, Ill., was hit 126 times by tows in 1994.

Use the guide to learn the key parts of a tow from the keel to the wheelhouse, and study a glossary of towboating terms from break coupling to hoppers and jackstays to the towknees. The booklet provides insight into how barges are broken down to pass in sections through locks and learn the history behind the dozen towboat companies, from Davenport's Alter Barge Line to the large Ingram Barge Company and its 60-some towboats and 1,800 barges.

Order at www.bigrivermagazine.com or 1-800-303-8201. Credit cards accepted. \$11.95. The 64-page booklet contains maps, diagrams, history and viewing tips and locations.

Have fun, get fit, save money and reduce carbon emissions at the same time by modifying your form of transportation. May is home to Bike to Work Week and biking to work or for errands has many benefits. A ONE WAY, 10-MILE COMMUTE CAN SAVE \$160 MONTHLY IN GASOLINE AND 107 POUNDS OF CARBON DIOXIDE EMISSIONS. A 180-pound male will burn more than 1,000 calories a day. So put your helmet on and start pedaling. Visit www.bikeiowa.com to learn more about biking to work and finding fun rides around Iowa. —Kathleen Willem

Family Fun with Nature Crafts

The best time to collect willow is from late fall to early spring, while trees are dormant. Green willow bends easier and will not shrink as much during the drying process. Willows must be used within a few days of cutting unless kept frozen. As the basket dries, the willow will darken in color. (Read the willow art feature story on page 52 to learn more about willow.)

MATERIALS

$\frac{3}{4}$ inch wire brads, small hammer, small wire clippers

$\frac{1}{2}$ inch diameter willow, cut as follows: 54, 6-inch pieces (base and sides), two 26-inch pieces (handle).

$\frac{1}{4}$ inch diameter willow cut into six 18-inch pieces (hoops)

INSTRUCTIONS

Begin by nailing four of the 6-inch pieces into a square.

Nail six more 6-inch pieces, evenly spaced, between the two top pieces of the square to form the basket base. Continue nailing the remaining 6-inch pieces upward, log cabin style.

To make the hoops, nail one 18-inch willow piece to the bottom right edge of the base corner. Nail the piece again at the upper right corner. Gently bend the willow to form a hoop. Nail it at the upper left corner, continuing downward and nailing it at the bottom left corner. Repeat for the remaining hoops, three per side.

Nail the handle strip to the bottom and top of one side. Gently bend the handle over the hoops and down the opposite side; nail the handle in place.

Trim any nails that poke through to the inside of the basket.





Long used by artists from Leonardo Da Vinci to today's art students, charcoal sticks can easily be created at the campfire, providing a ready-made supply of fine art supplies for creative children and adults to sketch natural surroundings.

"I give the sticks as gifts" to art-minded friends, says Lee Zieke of Decorah, who's made willow charcoal for 15 years and grows willow at her nursery to make basketry and other items (*see page 52 for more willow art*).

THE CONCEPT

Willow, due to its high carbon content, has been a favorite for charcoal sticks since ancient times. Burning it in an oxygen-starved environment creates partial combustion and leaves behind carbon in the form of charcoal.

MATERIALS

- 1) Metal can with tight fitting lid. Purchase an unused paint can from a home improvement center or use a smaller vessel such as a steel-cut oats can, tea container, etc.
- 2) With a nail or awl, punch two small holes in lid.
- 3) Cut dead willow sticks to length of can. Select sticks sized about pencil-diameter or slightly larger. (If cutting live willow, the sticks must be dried and cured. A spring cutting should be

ready by late summer. Store a bundle of live sticks in a garage or other dry place until cured.) When ready, tightly cram the sticks into the container and secure the lid.

THE CHARCOAL PROCESS

At the campfire, place the stick-filled can into the fire. The heat will ignite the sticks and flames will jet out of the lid holes with a hiss. When the flames cease, the charcoal is done. Let the fire burn out and the can cool. "Some sticks break more easily than others," says Lee Zieke, so store them in a protective container to avoid breakage.

PAPER AND SUPPLIES

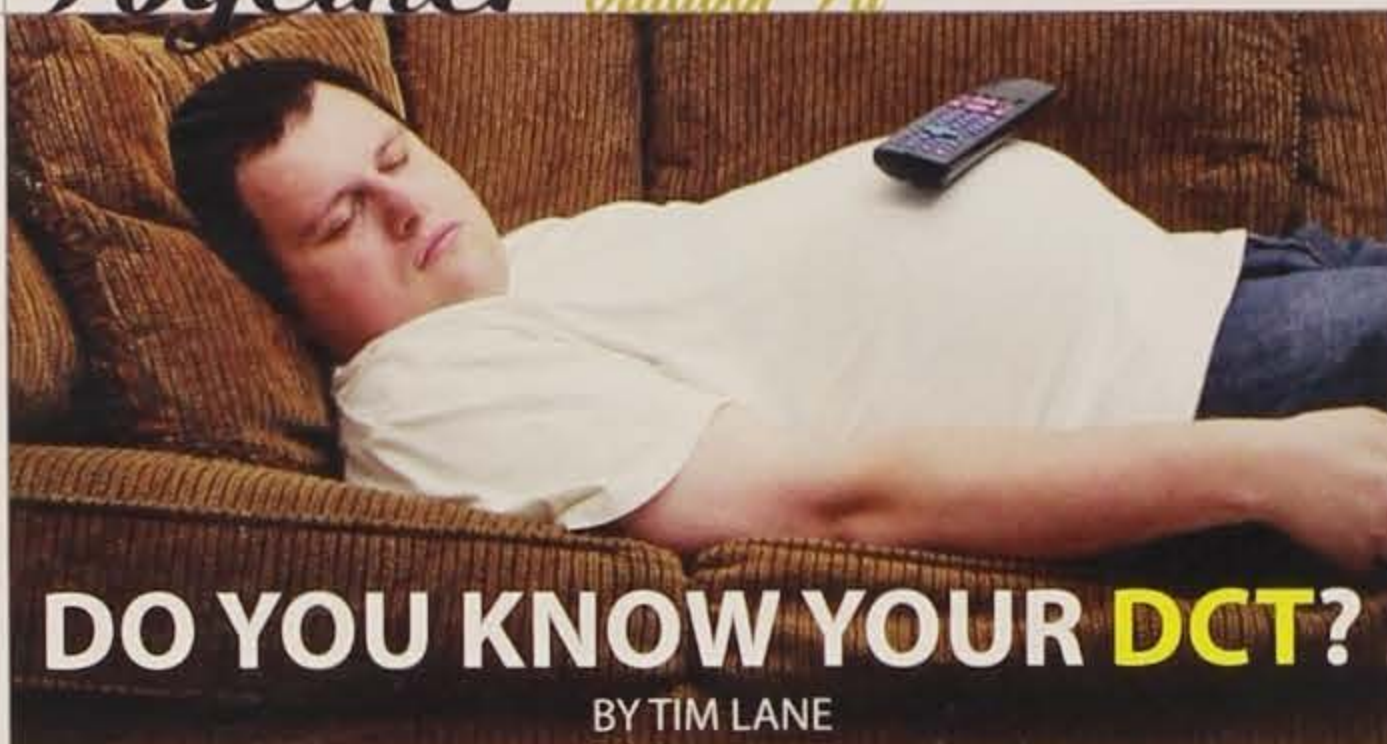
An art supply or craft store will have paper suitable for charcoal. White, thick paper with a slight texture helps the charcoal adhere to the surface. Vellum pad, printmaking, watercolor and fine drawing paper work well.

A few erasers can help create subtle gradations in tone. Use hard erasers to create white lines and highlights and paper towels to lighten, erase or blend shades.

PROTECTING ART

Treat finished pieces with spray fixative to set the charcoal onto the paper. Frame work under glass, leaving a space between the glass and paper to avoid smudges.





DO YOU KNOW YOUR DCT?

BY TIM LANE

"Every time you think television has hit its lowest ebb, a new program comes along to make you wonder where you thought the ebb was." —Art Buchwald
 "I find television very educational. Every time someone switches it on I go into another room and read a good book." —Groucho Marx

Recently I noticed two commercials showing a consumer continuously interacting with a screen as he moved from the couch to various other settings. My fear is soon individuals will wear glasses or helmets that provide audio and video stimulation to help "connect people."

Technology is great, but living online 100 percent of every waking hour has unintended consequences. Currently many of us sit in front of a computer for eight hours a day, and then go home and head for the couch to surf the Web, play games or watch television, exchanging one seat and screen for another.

Here is some bad news. Even if we try to squeeze in an hour at the gym, there is evidence suggesting all that sitting negates physical activity. This new research focuses not on how much exercise people get, but how much of their time is spent in sedentary activity and the resulting harm.

I came across one such report in The Journal of the American College of Cardiology. The gist was that by spending so much time in front of a screen, even if we are active, the benefits are compromised.

All the more reason to get active in the outdoors and away from the screen, this study found those who spent two or more hours a day sitting in front of a "recreational" screen were twice as likely to suffer a heart attack or other cardiac event versus those who watched less. Those who spent four or more hours in front of a screen were 50 percent more likely to die of any cause. Now here is the worst of. "Exercise didn't mitigate the risk associated with the high amount of sedentary screen time."

Another study found men who spent more than 23 hours a week watching TV or sitting in cars were more likely to die of heart disease than those spending under 12 hours per week, regardless of exercise routines. Even among children, higher blood pressures are related to screen time.

The message isn't stop exercising, but to be conscious of your couch hours. I think we should create a new vital statistic. Not only will doctors share your cholesterol and blood pressure, you'll share your DCT...daily couch time. A 4- to 5-hour level in this area can be considered deadly.

I recently heard of a woman who decided to walk her child to school. She would walk to and from the school twice a day. Over the course of a year she lost 60 pounds. In this instance the activity replaced screen time. So, once again, the news is we need to engineer more activity into our routine...and if we are reducing couch time, even better.

Today I am not asking you to visit a park, gym or ride your bike to work. I ask you to calculate for one week how many hours you spend in front of a screen for leisure. Then take a hike.

Tim Lane is a nationally recognized authority on public health and physical activity. Last summer he and his buddies rode bicycles across Iowa, river to river, in 21 straight hours.

But Why?

Helping adults answer children's nature questions

BY A. JAY WINTER

A. Jay Winter educates up to 20,000 Iowa children each year as the DNR's training specialist at the Springbrook Conservation Education Center.

HEATHER, AGE 11, IN LEE COUNTY ASKS:

Why do dogs stick their heads out of car windows?

For dogs, it's a rush to hold their heads out the window, but not because they like the wind whipping through their fur. It's because the fast-moving air is a smorgasbord of smells.

Dogs have an incredible sense of smell, much more powerful than ours. The amount of a dog's brain devoted to smells—figuring out what they are and what they mean—is 40 times larger than a human's. While people have about 5 million brain receptors to interpret smells, the average dog has 125 million. Beagles, expert scent trackers, have 225 million receptors and bloodhounds have 300 million.

Dogs use their sense of smell to learn about the world around them. When they stick their head out a car window, they know who's grilling steaks down the street and where the neighborhood cat is. Dogs' already impressive sense of smell is even better when they're moving quickly, making a car ride an awesome treat for your best friend.

Since dogs can focus a little too much on the smells out the window, you need to keep their safety in mind. Make sure they can't jump out the window, they're protected from tree branches, signs and other objects your car is passing by, and that they're not distracting the driver.



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\$9.00 shipping and service per item. Please allow 4-6 weeks after initial payment for shipment.
Sales subject to product availability and order acceptance.

TIPS, TRICKS AND MUST-KNOWS TO ENHANCE YOUR OUTDOOR FUN




TOE THE LINE

Sidestepping puddles and muddy sections widens hiking trails by killing vegetation and furthering erosion. Trails are designed for repeated human use and are more easily repaired than the vegetation. **You've got hiking boots for a reason—buck up and tromp straight through wet areas and stay on trail.** After the hike, clean boots by removing any glops of wet mud, letting the rest dry and removing with a brush. Remove laces and rinse separately. Use a damp rag to remove dried dirt, rinsing rag as needed. Then use a leather cleaner and conditioner. If the boot interior is damp, remove insoles, and stuff with crumpled newspapers, removing the next day. Don't dry boots in the sunshine or use hair dryers. Both can degrade boot materials.




Fishing Rod Life Jacket

Spend enough time fishing Iowa lakes and rivers and you might lose a rod and reel to a big fish. Keep your rod and reel afloat with a section of foam water pipe insulation secured around the rod shaft with zip ties. It not only keeps jettisoned equipment afloat, it also makes a comfy handgrip to fight monster fish. Buy foam insulation with a small inside diameter and paint with high visibility colors like orange, chartreuse or even white.



Double Lure

Return tired, old stick and crankbaits to active duty by marrying broken and busted Rapalas and Shad Raps with Daredevils and other spoons. Connect the two lures with a 6- to 18-inch steel leader. Remove Rapala hooks when fishing the weeds, or keep in place for the chance at a double. Often the sight of one fish feeding on another will trigger predatory feeding instinct.



START YOUR OWN WILLOW PATCH

Bury fresh cut, non-rooted 4- to 6-inch cuttings in moist soil with 1 inch of the cuttings above ground. You will get one or two shoots the first year. Cut willow to the ground in the spring for six or seven shoots the second year. Repeat and you'll get 14 or 15 shoots the third year. Trim again and you'll have 30 or 40 shoots the fourth year. This process of coppicing produces slender rods for basket weaving.



Mysterious Drummer

There has been a stream of rumors trolling around that the distinctive drumming, or grunting, sound of the freshwater drum (a common species of the Mississippi and Missouri rivers) originates from the unusually large bones located in the head of this silvery fish. These stone-like bones, called otoliths, can be up to 1 inch in diameter and are found in the ear of this boisterous bottom-dweller. Otoliths act as an internal global positioning system by assisting the drum in orientating itself in murky waters, but make no bones about it—otoliths are in no way responsible for the drum's characteristic cadence.

The reason for the commotion appears to be the fish's muscles in motion. The drumming sound can be attributed to a special apparatus connected to the drum's swim bladder. Grunting results when two elongated muscles move a tendon over the swim bladder. Only sexually mature males possess this crooning capability, so it is assumed the noise is used as a type of spawning serenade.

Considering the theory that the drum's grunting noise comes from their bones doesn't swim, it looks as if we've busted this myth hook, line and sinker.



Ask The Expert Cathy in Manchester asks: "Can I include animal by-products in my compost bin?"

BY SHELENE CODNER



It is often suggested that meat and dairy be excluded from home compost piles and assumed by many that these materials are not compostable. Meat and dairy products can be composted, but the process needs close attention. It takes much higher temperatures for fats and proteins in meat and dairy products to break down. Higher temperatures increase the risk of compost pile fires. In addition, a higher ratio of carbon is used in order to provide adequate cover to mask odors and reduce potential vermin invasion.

Composting meat is appealing to livestock producers who commonly compost animal mortalities and wastes in a highly monitored setting, but is generally not for home composting. That is due to the increased maintenance, primarily the need to continuously monitor temperatures and to be on alert for unwanted animal visitors who might be attracted to your pile.

In addition to meat and dairy, other items that should be

excluded from the home compost pile include fats such as peanut butter and mayonnaise, which also take longer to break down and require higher temperatures to decompose; domestic pet droppings, which can contain parasites; and diseased plants and weeds. For diseased plants, the compost pile temperatures needed to kill the disease are often not reached and the disease may spread when applying the finished, nutrient-rich humus.

However, composting everything in addition to leaves and vegetable trimmings can even include household wastes like human and pet hair, nail clippings, dryer lint, vacuum cleaner bag contents or materials collected in bagless systems, tissues, paper towels, cotton balls and cotton swabs. Learn more about composting with a comprehensive brochure from Iowa State University Extension at <http://www.extension.iastate.edu/Publications/RG206.pdf>.

GOT A QUESTION? Send to: ASKTHEEXPERTS@DNR.IOWA.GOV

Lost In Iowa

BY JENNIFER WILSON PHOTOS BY CLAY SMITH

BELOW: Travelers can ride what Mark Twain called "Floating Palaces" from Le Claire to Dubuque and back again along the Mississippi River. **RIGHT:** This easy-going riverboat cruise delivers up-close views of river wildlife with minimal work. A great way to relax in nature—and in style.



The River Rolls On By

The drama of the Mississippi River unfolds before passengers kicking back on a lavish Victorian steamboat.

The foamy water's edge peels away from the hull of the riverboat *Twilight* as it chugs steadily against the current of the fourth-longest river in the world. On the *Twilight's* 166-mile journey on a stretch of the Upper Mississippi from Le Claire to Dubuque, the wide brown horizon is broken by quiet dramas: the scanning flight of an eagle, the stark silhouette of an old iron bridge, a hulking barge drifting toward the Gulf of Mexico.

Mark Twain called these classic three-story affairs with rounded stern and ornate fancywork "Floating Palaces." Operators in the 1800s deforested whole riverbanks to fuel the popular cargo haulers.

Today, on the *Twilight* built in 1987, passengers watch America's revitalized river from the fantastic comfort of a deck chair or a lush Victorian salon.

IT'S SO WILD!

A group from Ohio drinks bloody Marys in the *Twilight's* full bar and discusses what's rolling by outside their window like a slow-paced documentary film—except that it's live, and there are snacks and meals of chicken, fish and prime rib.

"I didn't know the river was this big!"

"I didn't know it would be this dirty."

"It's not dirty! There's been a lot of rain."

"The countryside is so peaceful. It's so wild!"

It's a largely senior crowd on this two-day trip that begins in the early morning in Le Claire, where Buffalo Bill Cody was born and the History Channel's *American Pickers* revived the river-town economy. The boat chugs upriver to the Port of Dubuque, home of the National



Mississippi River Museum and Aquarium, where passengers disembark for an overnight at the Grand Harbor Resort and Waterpark. In the morning, after time to sightsee in Dubuque, the *Twilight* makes its slow return to Le Claire.

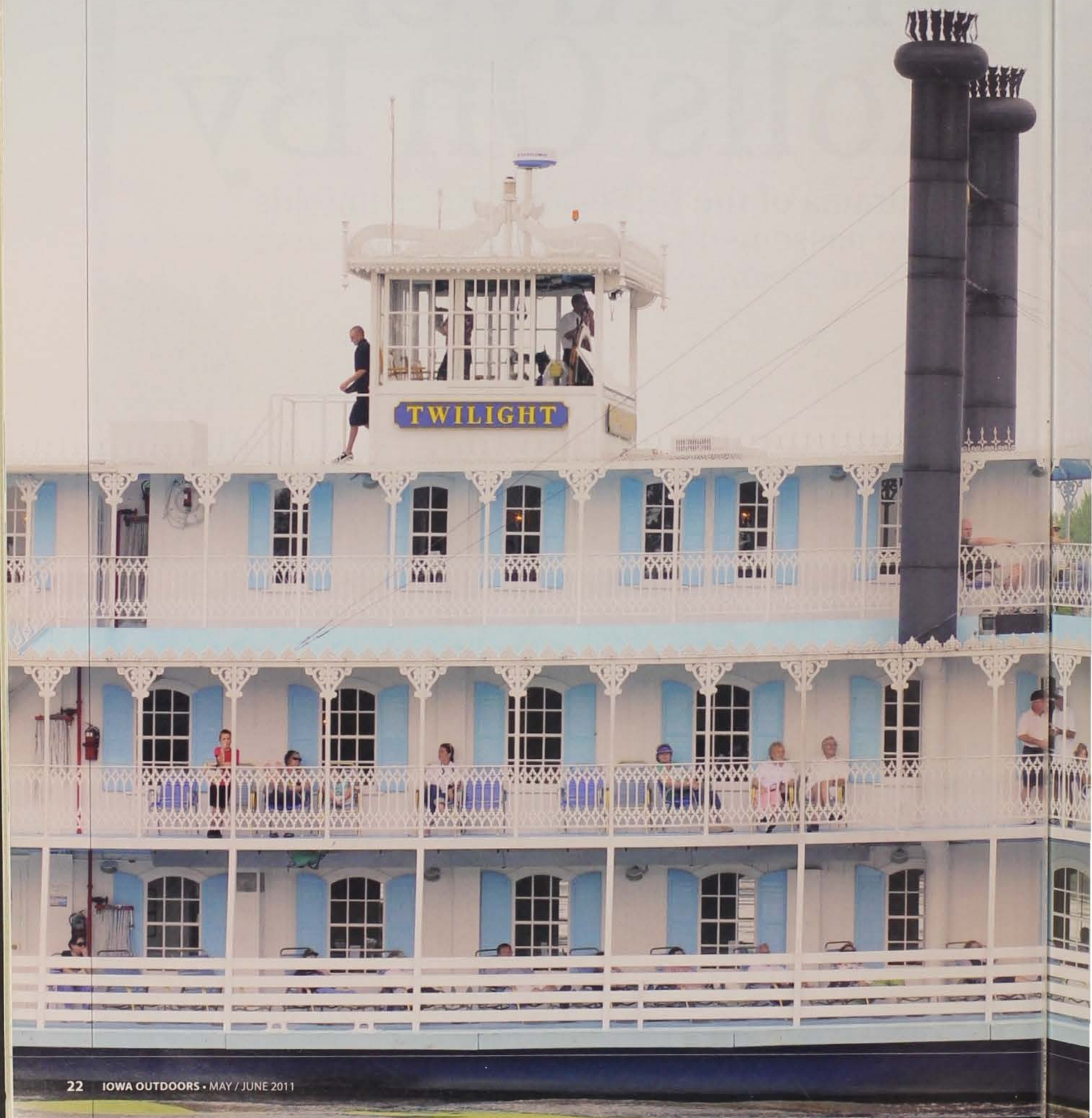
For entertainment, there's bingo, a Mark Twain impersonator and spectacular wildlife. Sixty percent of all North American birds use the Mississippi River basin as their flyway—that's 326 species, many of them heading north during the spring season. On its journey, the *Twilight* passes 13 eagle nests and a good portion of the Upper Mississippi River National Wildlife and Fish Refuge.

In other words, wise travelers bring binoculars.

Sparkly speedboats shoot like arrows through the current. The occasional river shanty makes a last stand on the water's edge. The *Twilight* passenger's journey is a mellow one. Sloughs and backwater nurseries shelter fledgling birds. They give way to sandy beaches, wide-open lake-like vistas and 600 tiny islands. A fiery array of hickory, oak, walnut and cottonwood trees brighten up the view on water the color of church-basement coffee.

Lost In Iowa

The three-story riverboat has a deck on every level for lounging, and guests are invited to visit the riverboat captain to get a taste of the pilot's life—and Captain Kevin Stier's vast knowledge of river lore.





Lost In Iowa



Such a civilized way to travel through tranquil waters.

"Once, up north on a lock, the river was almost five miles wide, and a big storm blew in," says entertainer Mark Arnould, who plays folk songs on the *Twilight*. "I could just see it coming at us. This craft is built so well that we just pulled up to a sandbar and I kept right on playing, watching that storm come in."

The *Twilight* plows past several buoys. The voice of riverboat Captain Kevin Stier comes over the sound system from the captain's nest. Sometimes Stier points out an eagle's nest or a great blue heron. Maybe he'll note that the river bottom is composed of sand—its muddy color the product of the streams and tributaries that feed it.

This time, he says that the buoys indicate a shallow point along the river. "This is Cordova Slough, a natural crossing for early settlers and Indians," he says.

For hundreds of years, Native Americans used the river for trade and travel, crossing at its many shallow areas.

In fact, in the 1800s, steamboats rarely survived longer than five years because sticks or rocks ripped open the wooden hulls. It wasn't until the 1930s, when the Works Progress Administration installed the lock-and-dam system, that the Mississippi River's main channel had a regulated, steady depth of at least nine feet.

A LIVE ECO-DRAMA

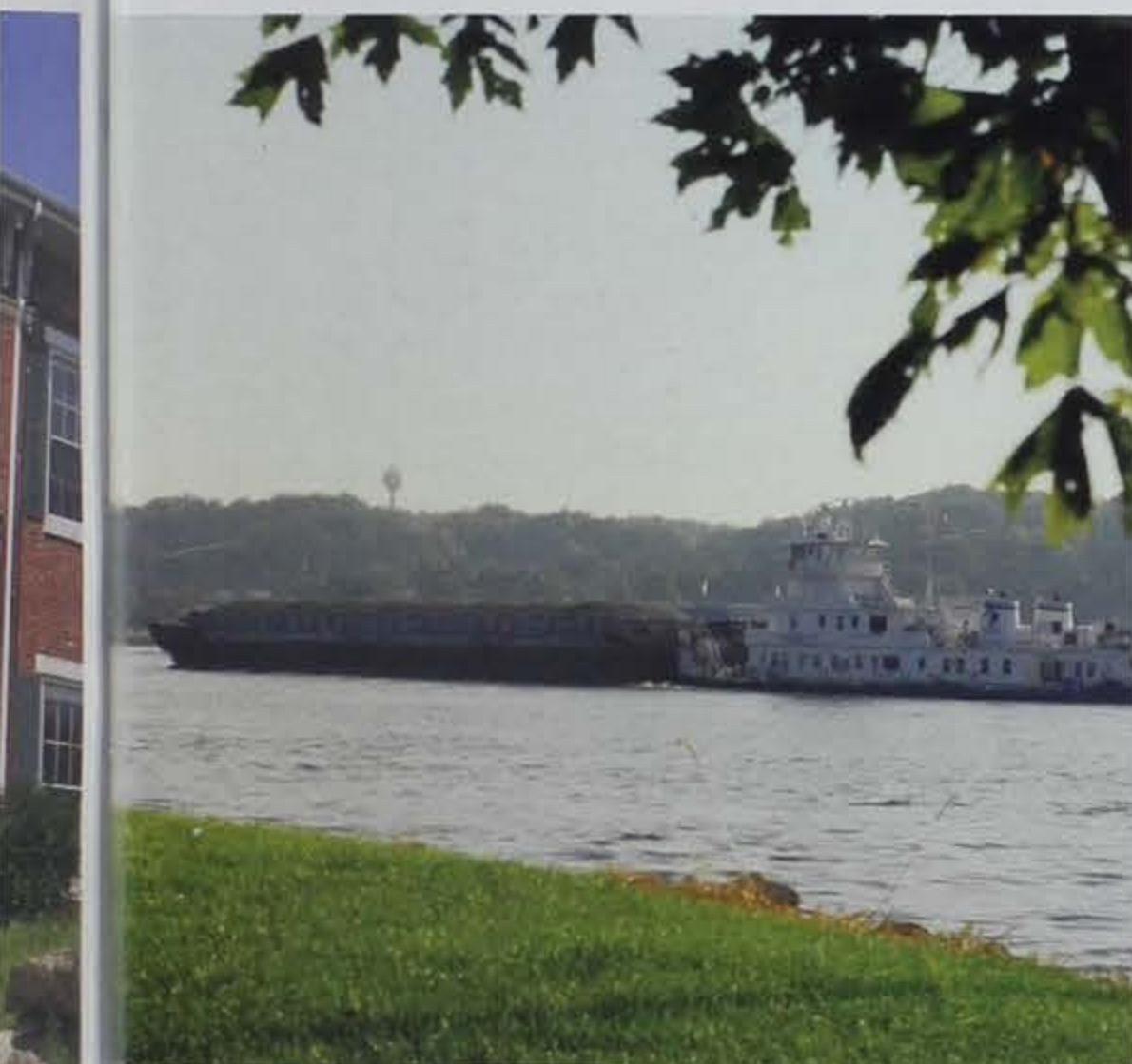
The *Twilight* passes a beach created by dredge sand. On summer weekends, Stier points out, islands like this are generally flocked by kids lounging near beached Waverunners and family boaters breaking for picnics. Today's guests are a flock of Canada geese and a bald eagle that's just snagged a fish.

"It doesn't have its white head or tail yet," he says. "They don't get those markings until their fifth year."

The views can get pretty dramatic. Past sightings include a bobcat lounging on a log, a huge fish drowning



LEFT: For the overnight stay in Dubuque, passengers make their own itinerary, from shopping to historical walking tours. On board, and always within inches of a lounge chair, passengers enjoy an amazingly relaxing journey. Most passengers overnight in Le Claire before the trip begins, and there are some memorable dinner options, including the newer Crane & Pelican in a renovated Italian-style house overlooking the river. On board, food is served often in the ornate dining room of the *Twilight*. **RIGHT:** Main Street in Le Claire has become a shopping destination for antiques, in part thanks to the History Channel reality show *American Pickers*, whose Antique Archeology store is based there. **BELOW RIGHT:** Riverboat staff on the *Twilight* are helpful and outgoing. Passengers can get as close to deck work as they want, here observing a lock.



the eagle that caught it and a deer swimming near an island.

"I love it," says R.J. Coker of Knoxville, Tenn. "I'm going home to read *Huckleberry Finn* again."

Stier notes a canoe passing by.

"It's amazing how many people we see every summer paddling or taking a raft all the way from Minneapolis to New Orleans," he says. It's a two- or three-month journey. Once the *Twilight* rescued a swamped kayaker on his way to the Gulf of Mexico.

The scenery changes like that—sometimes subtle, sometimes striking. More than 400 white pelicans line up near one of the two locks the riverboat navigates. Their population has swelled in past years. "I saw six white pelicans in 1990," Stier laughs. "Now we have 2,000 pelicans in a 10-mile radius of Lock and Dam 13" above Clinton.

The pelicans delight the two young passengers

on the boat. This isn't a particularly kid-friendly trip—no children's games, lots of sitting still—but there are family-pleasing aspects. The well-mannered and accommodating crew serves kid meals. Another crewmember hangs out at the boat's edge, braiding giant rope bumpers to protect the hull from dock damage.

Stier encourages passengers to come up to the pilot house, where he stands at the wheel in his linen shirt, cargo shorts, tennies and handlebar mustache. He lets one of his young visitors stomp the whistle, then gives her a seed for a cultured pearl: freshwater native mussel shells that are sliced, cubed and rounded before being implanted in a marine oyster to process.

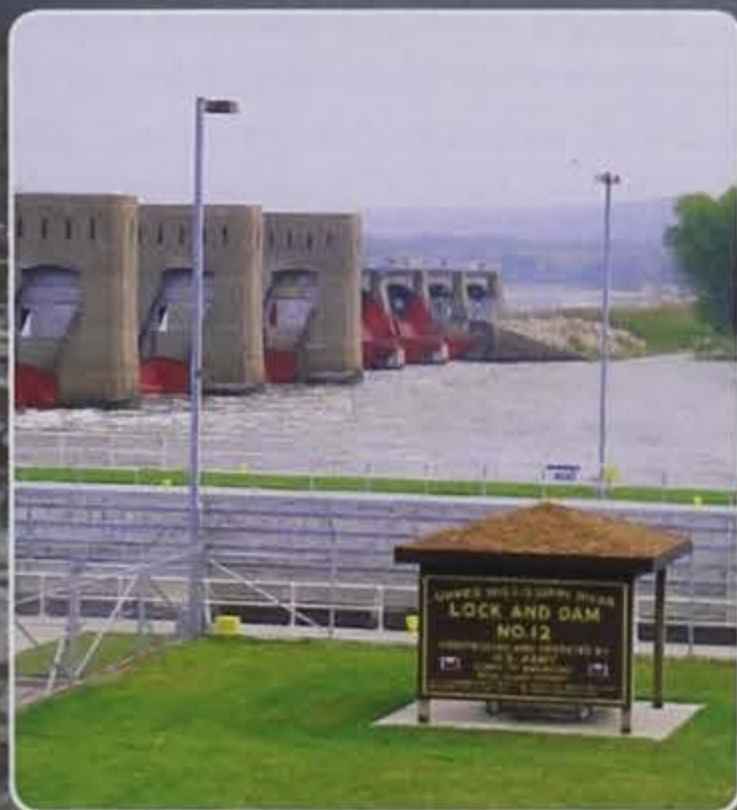
EVER-CHANGING RIVER

A group from Tennessee dominates the deck chairs on the hull, submitting entirely to the *Twilight's* demand that you just sit back and watch the river. The boat passes

Lost In Iowa



Making its way through Lock and Dam 13 above Clinton, the *Twilight* passes through the 110-foot wide, 600-foot-long lock while Captain Kevin Stier narrates. It's a fascinating "stair-step" up and down the river. The ship also navigates the lock at Bellevue and travels past Bellevue State Park.



Lost In Iowa



flooded wild rice fields—fodder for migrating birds—then rolls by underground bunkers at the former Savanna Proving Grounds, built in 1917 to test cannons and used over the years on secret operations, much like the Air Force's Area 51.

Jim and Pat Welch of Decatur, Tenn., sit side-by-side, holding hands and marveling at what they've seen from the comfort of the *Twilight*.

"I'd like to drag a big catfish outta here," muses Jim.

He says he's impressed by the captain's navigation—the river is vast beyond their expectations and seems to be ever-changing.

"The river takes away and it adds back. I bet there's new stuff growing here every week," Jim says.

He's right. If the riverboat ride is a documentary, the movie is different with each journey, each passing season, every shifting current.

Stier points out a few stumps in the water where an island stood until just two years ago. "Nature is constantly

tearing an island apart, or moving sand from one area of the river to another," he says. "It's always changing."

A storm brews up ahead. The sky has turned a pale shade of gray, the water choppy. But the *Twilight* rolls on, solid and steady, as the passengers watch the latest scene develop in the reel of drama that is the Mississippi River.

TRIP NOTES

Twilight Riverboat. Two-day, 166-mile overnight cruise, including all meals, activities and lodging. End of May through October. \$329 double occupancy, \$369 single, children 10 to 14 \$189, under 10 \$159, kids 3 and under free. Sign up for the mailing list for e-mail updates and special rates. **800-331-1467; riverboattwilight.com.**

National Mississippi River Museum and Aquarium.

Recently expanded to a second building with saltwater and conservation exhibits. Admission charged.



OPPOSITE: Passengers enjoy sunlit views of Iowa shoreline from the decks. The vast Bellevue overlook as viewed from a hill atop Bellevue State Park. Popular with passengers, the famed Fenelon Place Elevator in Dubuque was built in 1882 and is the world's shortest, steepest scenic railway. LEFT: A population of white pelicans—hundreds of them—has grown along the stretch of river the *Twilight* travels. An old iron railroad swing bridge adds to the river's many charms.



350 Third St., Port of Dubuque, Dubuque.
563-557-9545; mississippirivermuseum.org.

The riverboat leaves early in the morning, so it's a good idea to stay in Le Claire the night before so you don't miss embarkation. Below, a few things to do while you're in a town that's livened up considerably in the past few years:

Comfort Inn & Suites Riverview. Not directly on the river, but a nice overlook view atop a hill, with a pool and continental breakfast. Doubles from \$85. 563-289-4747.

Holiday Inn Express Le Claire. Right on the river—request a room with a patio or balcony overlooking it. Pool and continental breakfast. Doubles from \$139. 563-289-9978.

Crane & Pelican Café. An 1800s restored brick building with an interesting menu including homestyle and

heirloom recipes plus vegan options and a garlic salad so strong that it burns going down—in a good way. Craneandpelican.com; 563-289-8774.

Faithful Pilot Café. Fine dining on the river, serving dishes such as ginger-soy glazed salmon and black-pepper-crusted duck breast—plus a solid wine list. Faithfulpilot.com; 563-289-4156.

Antique Archaeology. In a town with many antique shops, this is the famous one: home of the *American Pickers* television show, often with a star from the show signing autographs. Antiquearchaeology.com; 563-289-1530.

Buffalo Bill Museum. Buffalo Bill and Native American memorabilia and more. Tour an original 1800s steamer. Admission charged. 563-289-5580; buffalobillmuseumLeClaire.com. 🐃



Bright colors make warblers among the most beautiful birds in North America. These small, active birds feature short, pointy bills. Most are just 4 to 5 inches long, so binoculars are helpful. Practice using them quickly to follow the bird's movements. This northern parula (*Parula americana*) momentarily hangs upside down trying to catch an insect. Its bluish tones and bright yellow throat are distinctive. Search woods near water to find it migrating through Iowa beginning mid-April.

Winged Jewels of the Treetops

Master these 9 Tips to Find Secretive Wood Warblers

STORY AND PHOTOS BY TY SMEDES

Iowans savor spring when warm sunny days, new plant growth and the northward migration of birds contribute to a sense of renewal and rebirth. And while most backyard bird watchers can name favorite yard-birds, such as the bright red cardinal, the noisy blue jay or black-capped chickadee, many are unaware of warblers.

Learn the Basics

Warblers are like colorful, winged jewels flitting among the treetops. Usually difficult to see among the foliage, once you spot one, you will want to see more. All Iowa warblers are migratory, which means that all are possible vagrants outside their normal range and migration routes. While dozens of species migrate through Iowa, several species spend the warm months here to raise their young.

Warblers are small songbirds among the most brightly colored and beautiful in North America, with about 50 species breeding north of the Mexican border. Thought to have evolved in Central America, and later expanding their range to South America as the climate warmed, many migrated north to more favorable habitat and reduced competition for food.

Where to Find Warblers

Search in sizable woodlands, including Iowa's state forests, state parks and county parks. Continuous woodlands stretching along rivers are especially productive. And don't overlook "sky islands" like north-central Iowa's Pilot Knob State Park, which is surrounded by crop fields, but is attractive to tired migrating warblers looking for a place to land and fuel up. Several species

The bay-breasted warbler (*Dendroica castanea*) migrates through Iowa in early May enroute to summer nesting areas in Canada's spruce forests. It winters in Central and South America.



nest across much of Iowa, including the American redstart, common yellowthroat, ovenbird, prothonotary and yellow warbler. These species spend more time in Iowa, improving chances for viewing. Another less-common warbler, the cerulean, nests within a limited range in northeast Iowa.

According to DNR avian ecologist Bruce Ehresman, "nesting yellow-throated warblers have been confirmed at Geode State Park, and it is likely that both the hooded warbler and yellow-breasted chat nest in Shimek State Forest's Croton Unit. The veery is also known to nest in Backbone State Park." Additional species nest in Iowa on occasion, but records are sparse.

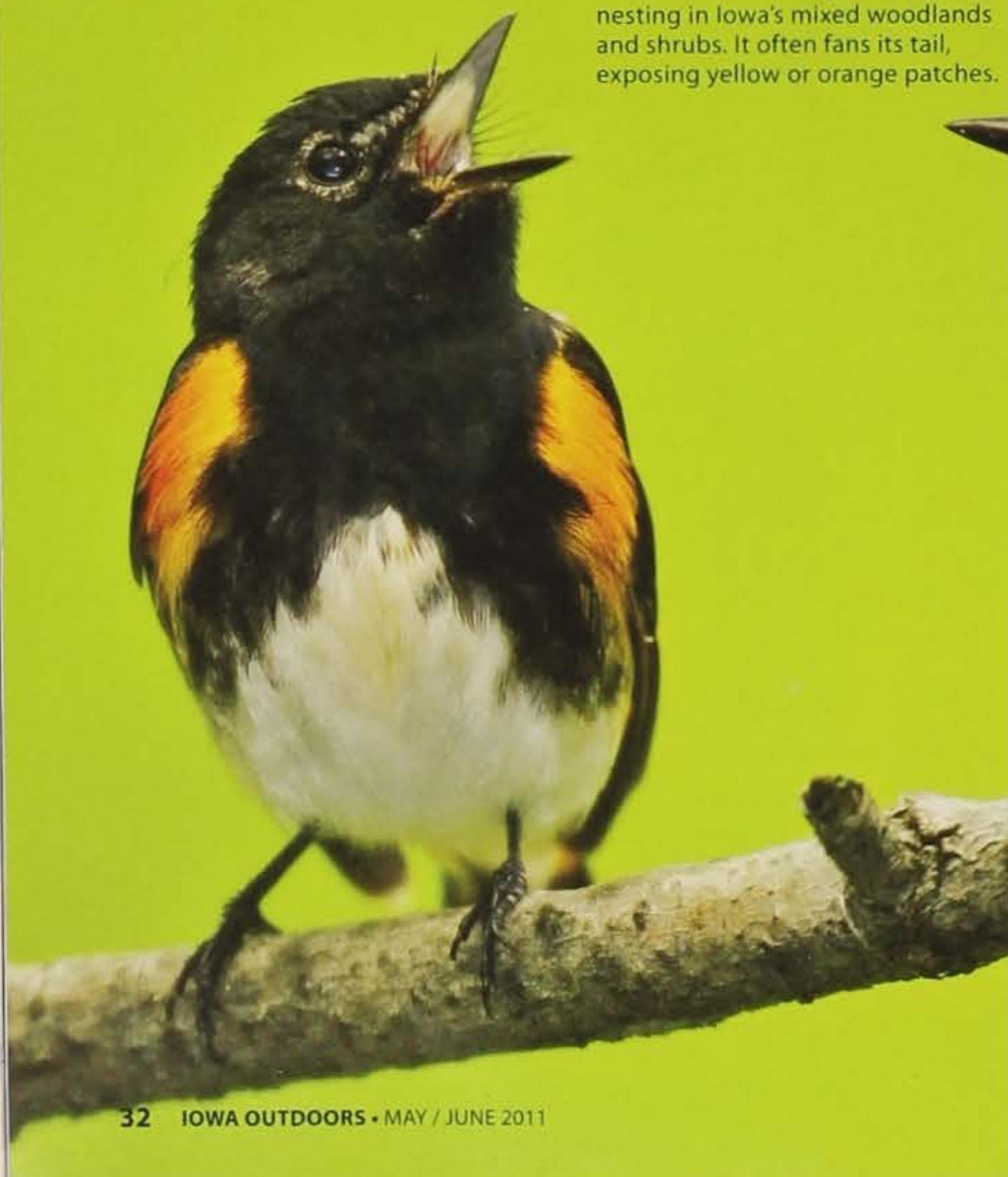
Learn the Corridors

More than two dozen warbler species use migration corridors through Iowa to reach nesting grounds in Minnesota, Wisconsin, Canada and Alaska. These routes are generally used again during the fall migration, when all warblers head south to Central America, the Caribbean, and northern South America. If you have luck finding warblers in an area, you will likely find them there again on their next migration.



The blackpoll (*Dendroica striata*) is the champion migrator of the wood warblers. It migrates through Iowa to breed as far west as northwest Alaska and winters east of the Andes mountains in South America, racking up 12,000 frequent flier miles annually.

The American redstart (*Setophaga ruticilla*) is commonly found nesting in Iowa's mixed woodlands and shrubs. It often fans its tail, exposing yellow or orange patches.



The yellow-rumped warbler (*Dendroica coronata*) is Iowa's most common migrating warbler. One of the first to appear, search as early as mid-April. Shown above is an adult female.

GET INVOLVED

Support non-game wildlife research and habitat by purchasing a non-game support certificate. The 2011 certificate features a winter image of the northern cardinal, an especially symbolic pick as a male cardinal graced the first certificate in 1979. It is a fitting image to help usher out this certificate that raises money to conserve songbirds and other non-game wildlife.

Prints are limited to 500 numbered editions and sell for \$5 each. To order, call 515-281-5918. Credit cards accepted.



In general, the plumage of warblers varies depending upon preferred feeding and nesting locations. Treetop species are often more brightly colored than those that dwell closer to the ground. The latter favor a more drab color scheme. The tremendous variety of coloration among warblers between species, males and females, and juveniles and adults make identification a challenge for many birders. Warblers are among the largest and most diverse group of birds found in North America. They add to the identification challenge by often quickly flitting about in heavily covered areas, making sighting and identification a reward to patient birders.

Often found in Iowa's wooded backwaters, the prothonotary warbler (*Protonotaria citrea*) is a common nester. A cavity nester, it is known to use unoccupied wood duck nest boxes. The bill changes color seasonally—black during the breeding season and paler at other times.



The adult male mourning warbler (*Oporornis philadelphia*) is a skulker, often found hunting for insects and spiders along the ground in dense undergrowth or second-growth habitat.



Know the Spring Migrations

Migration timing depends greatly upon the location of each species' wintering grounds. Some like the yellow-rumped warbler, or Myrtle, can be found in Iowa as early as mid-April. They winter in Central America and the West Indies as well as the southern coastal United States. Late-arriving uncommon species like the mourning and Connecticut warblers pass through Iowa in late May to early June, since they winter predominately in northern South America, and make a much longer journey.



The blackburnian warbler (*Dendroica fusca*) feeds high up in trees. It migrates through Iowa in mid-May.

Get Outdoors During Peak Migration

Mother's Day weekend in May is generally the peak of warbler migration, when possibly a dozen species or more may easily be observed in a day. Peak viewing often occurs over a 10-day period from about May 5 to 15.

Some begin appearing in late April, with a few late-arriving species hanging on until late May and early June. Warbler viewing before the trees leaf out always makes finding warblers easier.

Migrations often occur in spurts, caused by fluctuating weather patterns. Northerly breezes carry mixed flocks of warblers along their migration corridors, until they sometimes encounter a low-pressure ridge and strong headwinds. And since most warbler migration occurs at night, such a weather shift may cause fallout, when large numbers of warblers, exhausted after battling headwinds, are forced to land around dawn. Avid birders dream of such a phenomenon and those witnessing them speak of warblers "dripping from the trees."

Field Spotting Tips

You will need a pair of binoculars to gain close-up views of warblers, and to make accurate identifications. Hungry warblers usually flit from branch to branch, looking for insects following a long flight. And for that reason, spotting scopes and higher-powered binoculars prove counter-productive. The best magnification for finding warblers quickly and identifying their markings and behavior are 7 to 8 power.

When you spot a warbler, follow its movements and fix your gaze upon it while raising the binoculars to your eyes. Try to pre-focus to the same range as the bird, so that further adjustments are minimal for final focus. Purchase a harness system to eliminate binocular-flop while walking or bending over. The harness secures binoculars against your chest and in the same spot, ready to quickly slide upward to the eyes.

Learn These Identification Clues

COLOR AND PATTERNS

Your first impression of the bird's color is very helpful, often narrowing the field to just a couple of choices. Many warblers have yellow or orange plumage and the color location is important. Get a good look at the head. Often warblers have unique facial patterns, including a distinct eyebrow, eye-ring or eye-crescent. Look for a distinctive crown. Then look at the under-parts, including the chin, belly and tail. Are there streaks on the throat, belly or flanks? Look at the under-side of the tail. Many times, you will get your best look at the bird's underside since most warblers remain high up in the trees.

BEHAVIOR

Several warbler behaviors can set species apart. Foraging height, foraging style and body movements are useful identification clues. Each species generally forages at a certain height. Water thrushes and ovenbirds are ground foragers. Common yellowthroats usually forage in bushes, at a height of 3 to 8 feet. And while blackburnian, black-throated green and Cape May warblers prefer to forage near tree tops, they are occasionally seen at lower heights. While nesting, warblers will always feed at their preferred height, but migrating warblers are often very hungry, have landed in less than ideal habitat and will forage at the height food is available.

Most warblers hunt for insects among tree branches and leaves, bouncing from branch to branch, examining every branch and leaf. A few species are fly-catchers, making short flights to catch airborne insects before returning to their perch. The American redstart and yellow warbler are known for this feeding style. A few warblers are known for moving about large branches and tree trunks, examining each crevice for insects and larvae. Some of these have slightly longer beaks, adapted for probing the deeper crevices. The black-and-white warbler feeds this way almost exclusively, much like the white-breasted nuthatch.

BODY MOVEMENTS

Some warblers exhibit body movements that along with shape and size are good identification clues. For instance, the palm warbler is noted for its nearly constant tail-bobbing while the American redstart often fans its tail. A few ground-feeding species like the ovenbird walk rather than hop while moving. 🐦

INSET PHOTO: The yellow warbler (*Dendroica petechia*) is a common Iowa nester and breeds in shrubby areas especially near water. Its stunning yellow color is a dead giveaway to its identity. It often appears in Iowa around mid-May.



HELP WARBLER POPULATIONS

Experts agree that neotropical migrants, including wood warblers, have suffered significant population declines the last few decades. The overwhelming problem is the loss, fragmentation and declining quality of habitat. Most warblers require very specific habitats to nest and rear offspring. And most warblers aren't well adapted to parasitic nesters like the forest-edge-loving cowbirds that lay their eggs in warbler nests. They fool warblers into raising the baby cowbirds, often at the expense of their own young.

Iowa nesting warblers require suitable nesting habitat, and the warblers that migrate through Iowa require woodland habitat which is most often found along Iowa's river corridors. DNR's Bruce Ehresman adds that "Iowa's state forests offer the best nesting habitat since they contain large contiguous blocks of old growth forest, containing big canopy trees, which are preferred by several warbler species."




The adult male Wilson's warbler (*Wilsonia pusilla*) has a distinct olive and yellow color and black cap. Search near water or willow thickets to find it as it migrates through Iowa in early May.

WARBLER IDENTIFICATION AND FIELD GUIDES

- **Field Guide to Warblers** A great starter guide by Donald and Lillian Stokes. 176 pages. ISBN 0316816647
- **Warblers** the generally accepted warbler bible—by Jon Dunn & Kimball Garrett. 660 pages. ISBN 0762846763
- **Watching Warblers** a wonderful video identification DVD with close-up warbler footage, bird songs, range maps and migration routes—by Michael Male and Judy Fieth.

WATCH WITH EXPERIENCED BIRDERS

Iowa is home to many local bird clubs—many of which offer regular field trips to observe birds like migrating warblers. Novices are welcome. To locate a bird club in your area, visit the Iowa Ornithologist Union website at www.iowabirds.org/other/clubs.asp

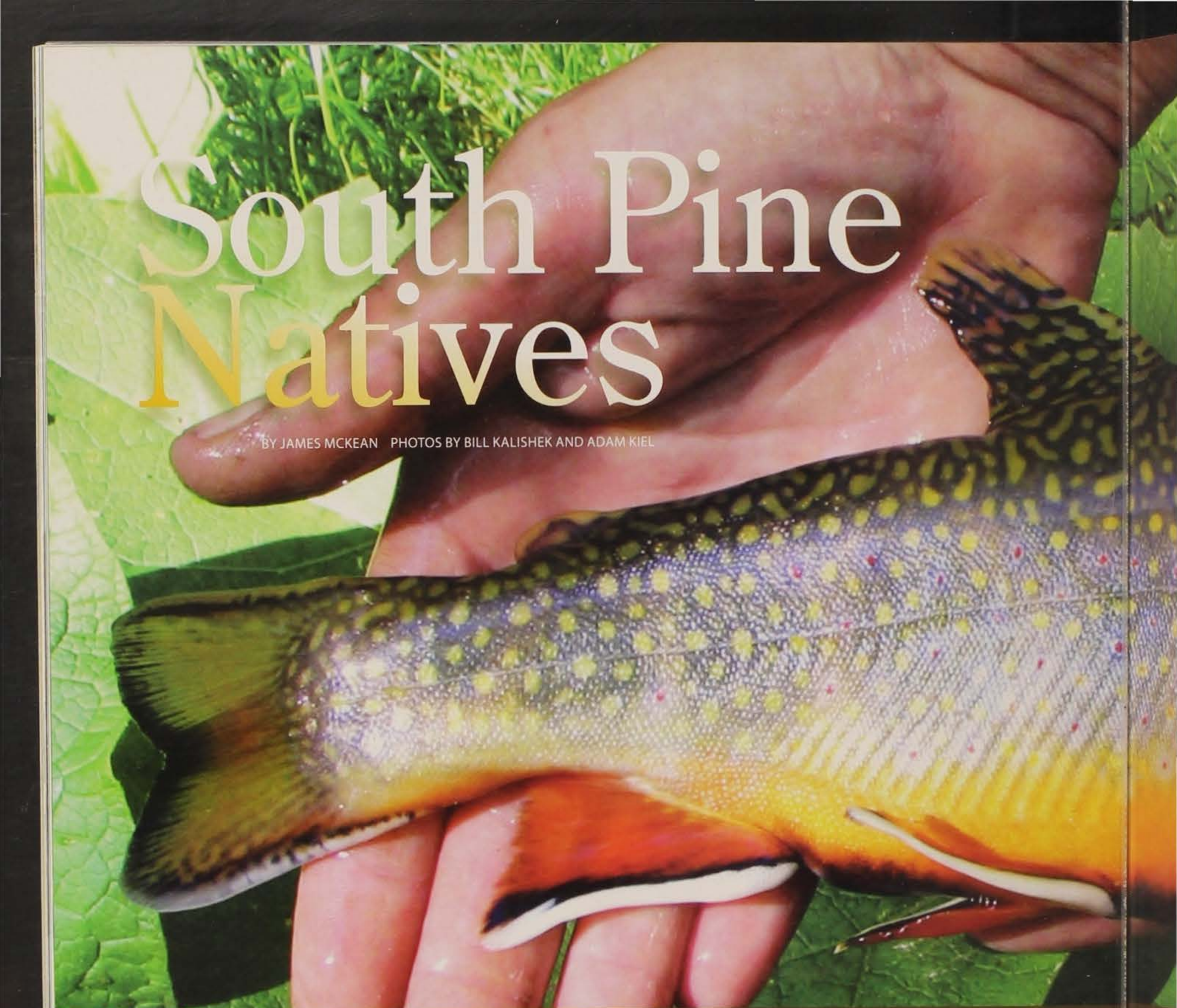


This male Tennessee warbler (*Oreothlypis peregrina*) has just caught a tiny insect, visible in his beak.



HOW TO FIND WARBLERS

Search sizeable woodland habitats, including Iowa's state forests, state parks and county parks. Slowly walk the trails, pause often and look for movement in both trees and shrubs. Peak viewing often occurs over a 10-day period from about May 5 through 15th.




South Pine Natives

BY JAMES MCKEAN PHOTOS BY BILL KALISHEK AND ADAM KIEL

All day we've fished South Pine Creek, and not a fish. It's hot for September, and needing to get out from under the sun, my friend Bob Grunst and I walk into a stand of willows and one ancient maple, where we find a woodpile and steel vats, one crushed by a storm-felled branch of the maple. Maybe it's a sugar operation, we speculate, long abandoned. I think of Frost's poem "The Wood Pile," how someone had abandoned his handiwork at the edge of the wilderness, the stacked wood an effort to mediate and connect with nature.

The shadows are a good place to sit awhile and think about why I can't connect with South Pine brook trout. "Had one half-hearted strike earlier," Bob says, crouching in the shade. I have nothing to add, and lean

my rod against the fallen branch and stir my fly box in search of the answer. They have fooled me all day. It's not that I haven't seen fish. This morning first thing after our long walk down here, I sat beside a meander in the creek where a riffle narrowed, turned and deepened into a pool. Stringing my rod, back far enough from the edge, hidden by blue stem, I stretched a little to watch the morning light glinting silver off the water. White limestone rubble lined the pool before it darkened around starwort and watercress swaying downstream in the current. Straight on, I looked and looked, but it wasn't until I glanced away, as if trying to see faint nighttime stars, that I saw the white-edged fins, then the outline of South Pine brook trout lying beneath the current and rising just enough now and then to take whatever the clean, cold water



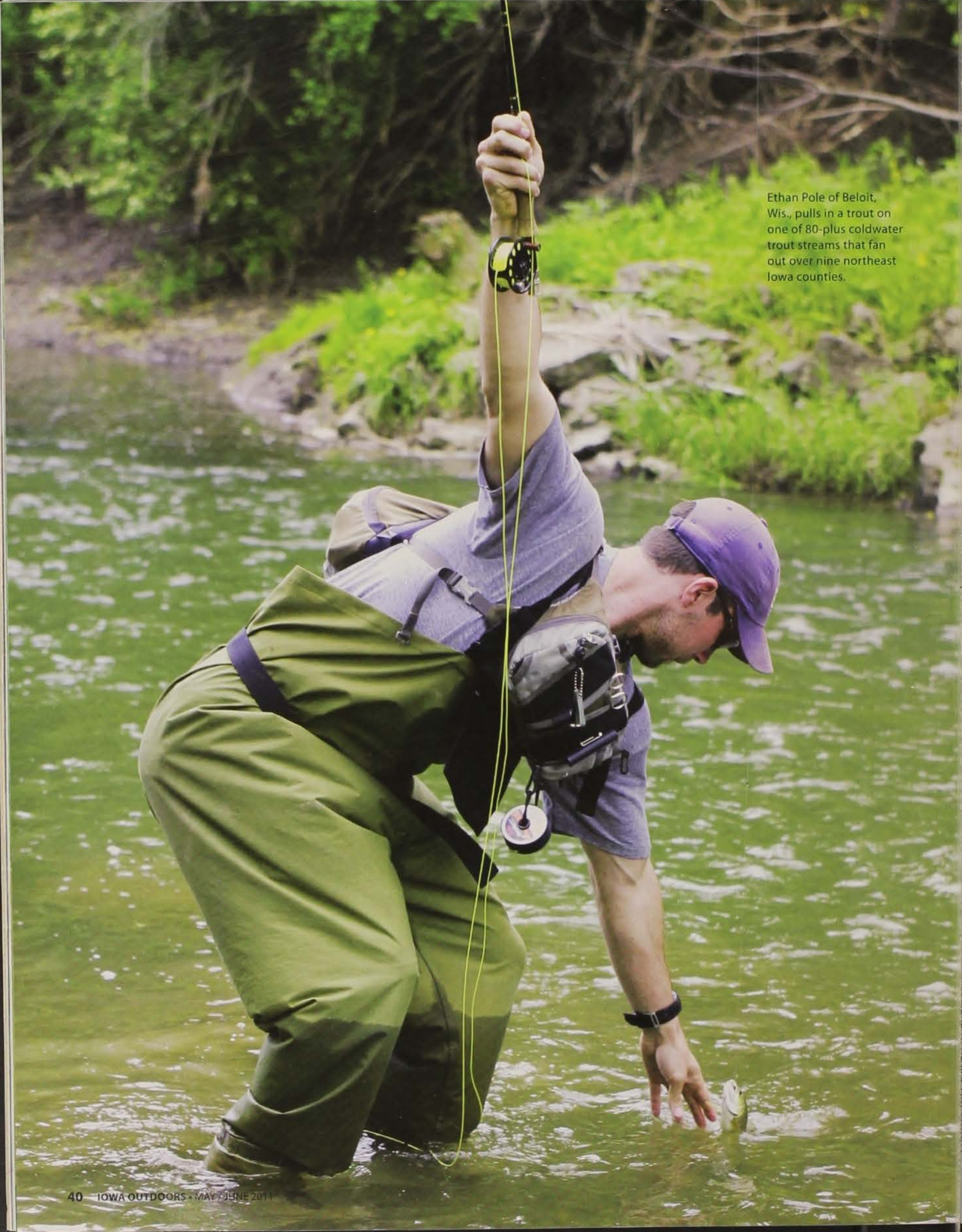
South Pine Creek in Winneshiek County is what all other trout streams strive to be. It is one of only six in Iowa with a viable population of naturally reproducing brook trout. Eight other streams have recent, yet inconsistent natural brook trout reproduction.

swept toward them. The creek spanned no wider than the length of my rod. My heart quickened, and when I stood I thought I heard in the still air of this green riparian draw the slap of a trout taking something off the surface.

The problem was that the trout saw me too. My shadow scattered them as if I were some huge predatory bird, the fish darting back and forth and headed for undercut banks, anywhere but where I was headed. I'm also sure they heard me along their lateral lines—the internal sense organ that detects movement, vibration and sound—as I slid down banks and maneuvered my way through the high grasses in between the bends and stepped through the creek to get rid of my shadow, to find a place to kneel and wait until the brookies forgot I was there and settled.

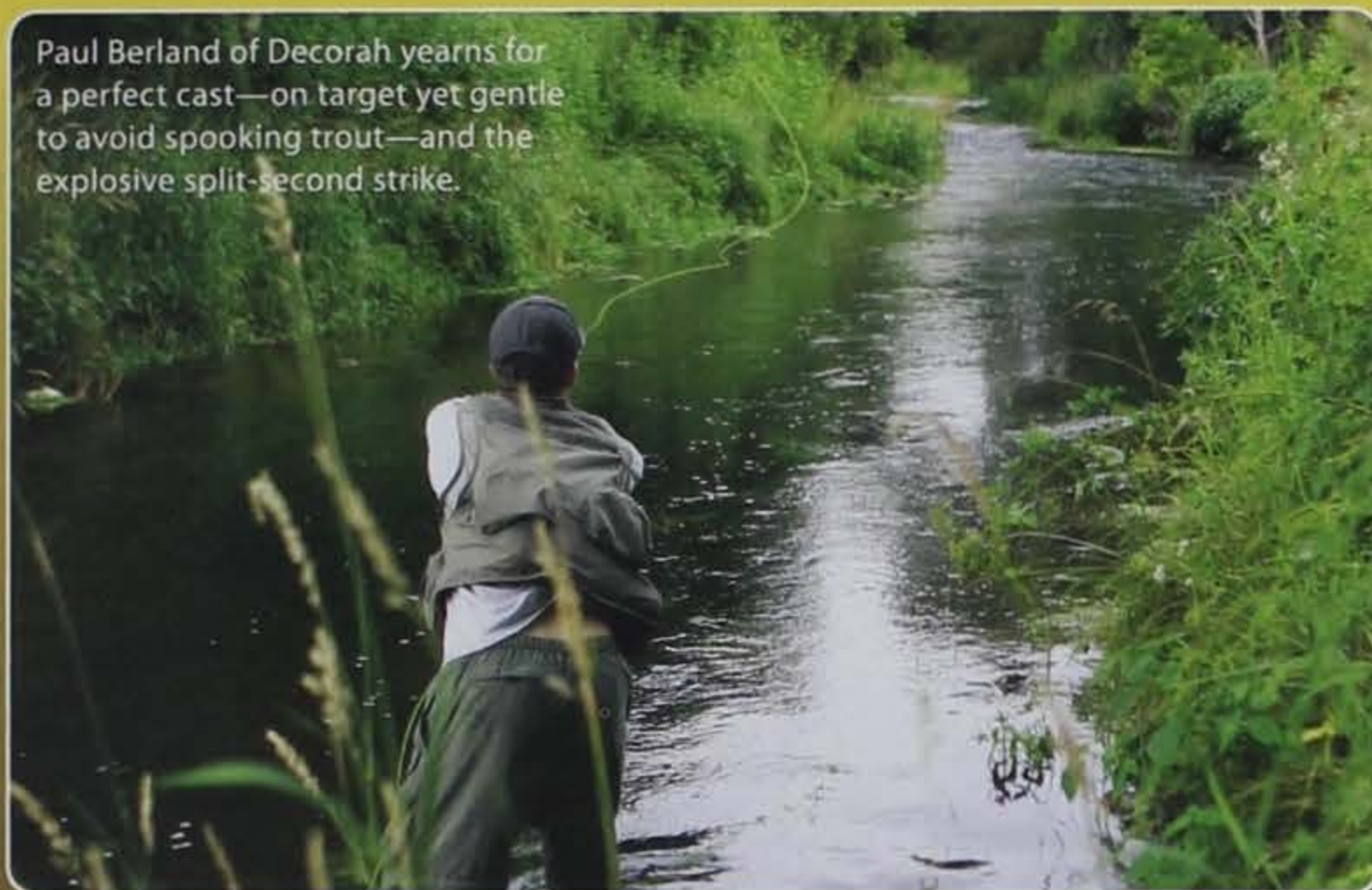
In his classic *"Iowa Fish and Fishing,"* James Harlan

says the brook trout is the only trout native to Iowa waters, and that "early written accounts and diaries of old pioneers refer to 'native' or 'speckled' trout in the northeast Iowa streams, but accounts elsewhere seem to refer to hatchery-planted fish." A few years earlier, I had caught a brook trout on Spring Branch Creek in Manchester. Awkward with my new fly-fishing catch-and-release interest and novice technique, I set the hook too hard when something tiny whacked at my big Adams fly and I launched the fish into orbit. When I searched the brush and grasses behind me, I found the 5-inch brook trout bleeding from its gills, bright crimson spilling down its white underbelly. But when I picked the fish up and lifted the barb-less hook from the corner of its mouth, the fish seemed lively enough, zipping out of my hands

A man, Ethan Pole, is shown from the waist down, wading in a shallow stream. He is wearing olive green waders, a purple baseball cap, and a grey t-shirt. He is holding a fishing rod with his right hand, pulling it upwards, and reaching down with his left hand to guide a small trout into the water. The stream is surrounded by lush green vegetation and trees. The water is a murky green color.

Ethan Pole of Beloit, Wis., pulls in a trout on one of 80-plus coldwater trout streams that fan out over nine northeast Iowa counties.

Paul Berland of Decorah yearns for a perfect cast—on target yet gentle to avoid spooking trout—and the explosive split-second strike.



as soon as I dipped it back into the creek. No blood on my hands or in the water. I happily found out later that blood red was a spawning color.

The Manchester brook trout was stunning, with red and purple and green coloring, and fine slippery scales and white-edged fins. That afternoon, I sat on the bank above a Spring Branch run and watched rainbows, like me a West Coast import, facing upstream, holding behind a riffle, adjusting all in a line. I wanted my brook trout to be native, for after 20 years of living in this highly cultivated state, I wanted to find and release something of the original Iowa, and earn, perhaps, a few more credits toward belonging here.

Most likely, however, my first brook trout was planted, given that I wasn't more than 300 yards from the Manchester Fish Hatchery. As far back as 1974 the DNR has known that South Pine's "skinny fish" were the only self-sustaining population of brook trout in the entire state of Iowa. But even after DNA testing, the debate remains whether these brook trout are heritage trout or the heirs of historical planting. David Faldet, in his book *Oneota Flow*, argues persuasively that these South Pine brook trout are not the same as Ice Age trout and more likely the result of evolutionary drift, the changes prompted by genetic variation, habitat change and natural selection, making them unique to here and now. What's known for sure is that they are distinct from strains introduced after European settlers arrived, and as David Faldet himself might attest, quite the fishing challenge. Marion Conover, former DNR fisheries chief, has written, "Brookies are hard to catch. These trout are smarter than the ones we get out of the hatchery. They're pretty wise."

All morning, I tried to raise at least one fish, and guessed finally that a size 18 parachute Adams, a mayfly imitation, a standard, might do the trick. When in doubt, tie on a smaller fly, the common wisdom suggests, and on one sore knee in a stand of blue aster and panic grass, I squinted over my glasses to thread the tiny Adams with 6X leader. Then I crawled back toward the head of a pool where I had seen

fish. One DNR article says South Pine Creek averages 11 feet in width, but it doesn't seem that wide, especially where the fish lie. The creek meanders some, wide and shallow over gravel in a few spots, slow and glass-like in others with hardwoods reflected in the mirror surface. Every so often the creek narrows and turns into a pool, dark, maybe 4 feet wide but deeper below the grass-covered bank. The DNR has done a wonderful job of restoring this creek, providing undercuts and structure for the fish that need current and quiet at the same time. The problem was that

in such tight quarters, casting from my knees, with overhangs, bushes, brush, the banks wide then narrow with the current driving the fly underneath the watercress and my line into the clutches of fleabane and cow parsnip, I was lucky to get a 3-foot drift before the fish panicked once again, racing up and down the pool. Not a good sign all morning and not a whack.

When Bob and I finally leave the shade near the end of our day and walk back toward the creek, I think that I might not catch anything here. I have fished since I was old enough to ride a bike, my spinning rod broken down and tied to the handlebars as I searched for creeks that fed Lake Washington north of Seattle. And the feeling of being skunked was the same then as it is now, a mix of disconnect and envy, and even a sense of being rejected by the fates as unworthy. Perhaps I should be happy with only "written accounts" more than a century and a half old of "native trout" in the Driftless Area of northeast Iowa. Maybe I have no answer for this creek or these fish or maybe the sun and heat have driven them down and another day might be better; these are the speculations borne of disappointment and self-doubt. But studying South Pine Creek, even without catching fish, makes it easier for me to appreciate Ira Cook's 1897 retrospect of surveying Iowa and to imagine his enthusiasm at finding in 1852 that the creeks of Winneshiek County "were pretty well stocked with speckled trout." He says, "I had not seen one since a boy of 10 years, and I could not resist the temptation to go after them." At 77, he remembered the first time he saw brook trout, their colors still vivid 67 years later. Natives, perhaps. Amazing.

Bob finds a likely looking spot to fish behind a riffle and I walk 50 yards farther to sit a moment beside South Pine before our climb back out. Is just being in this place and seeing brook trout enough today? I want to think that. In his essay "The Ephemera," the poet and Iowa fisherman Robert Schutlz says that standing in a small spring fed stream is to "lose oneself" to the elements at hand. "A skillful fisherman vanishes," he says, and goes on to mention that South Pine Creek holds brook

trout that may be natives. "In Northeast Iowa," he says, "with its prehistoric mounds, the Pleistocene snails, and the South Pine brook trout, a fishing excursion can feel like a trek back to the beginning." Across the creek on the southwest side of the draw, hardwoods fill in the landscape, steep and wooded down to the creek's edge, a terrain that undoubtedly helps cool these waters. An 1842 survey marks the corners of sections here with bur oak, black oak, white oak and hickory and ash. The surveyor describes this land as "high rolling." It took Bob and me more than 40 minutes to walk down to South Pine, and on this hot day, it will take us twice as long to climb the path two miles back through oak stands, up the hill and around the set-aside land and corn fields to get back to the car. I'm not ready yet.

Across the draw the oaks are huge, witness trees perhaps before hundreds of pristine seasons, the creek's water constant and cool all year from its source in limestone. Perhaps these trees witnessed the plow and livestock breaking down the banks. An 1882 plat of Pleasant Township shows the meandering South Pine overlaid with rectangular homesteads laid down by the Olsons, Nelsons,

Petersons and Johnsons, their claims all 90-degree corners. I have to laugh. Today I can't find a straight line in all of South Pine, except for the vertical of Big bluestem.

But there are still fish here this afternoon. Ten yards before me, a riffle turns beside a



grass-covered bank and opens and settles into a deep pool I can't see down into. Maybe if I dead drift a pheasant tail, a small mayfly nymph, beneath the surface, past the end of the riffle and then down through the pool, maybe that would work. I don't know what's there, but the water looks good, sun reflecting back into my eyes.


On a hunch, I tie the pheasant tail on without weight and without a strike indicator. Trying to vanish, I crawl behind a little rise on the inside bend of the pool, wait a few moments, and without more thinking, toss the nymph into the riffle and watch it drift around the corner out of sight. It vanishes as well. No drag. Not a ripple, the breeze calm, the current and leader indistinguishable, drifting, and then the leader stops.

Then the rod tip dips like a hand knocking on the door or a bell rope pulled, though there is no sound in this little valley except my saying, "I've got one."

The trout's colors are gorgeous, vermiculations along its back, olive sides with yellow spots and purple-red spots inside blue halos, the orange fins edged with white. My hands wet and open, I cradle the 10-inch Iowa brook trout and Bob takes its picture. I wonder if this is a true native trout, maybe the 80th generation of the speckled trout Ira Cook mentioned in reference to his 1850 survey, or maybe a distant heir to a thousand generations back before the glaciers. I can only imagine.

Then I start to worry, for the DNR people say these trout are fragile and must be released immediately. But I want to measure my brook trout, witness what might be original, hang onto something as driftless as memory in all that drifts around us. If I dip it in the water just a moment to revive it, I think, to clean it and maybe cleanse myself, I could take more pictures and look again. But this is a wild fish, alive now, and true to form, the moment I hold it beneath the surface, it is gone. 🐟



A photograph of a person fishing in a stream. The person's arm and hand are visible in the foreground, holding a fly rod and a black fly reel with yellow accents. The stream is surrounded by dense green vegetation, including tall grasses and shrubs. The water is calm with some ripples. The background shows more greenery and trees.

Holding the last naturally reproducing native brook trout in Iowa, South Pine's brookies are genetically distinct from others worldwide and closest to the original strain found in Iowa before settlement. They provide brood stock to return wild trout to other Iowa streams. Brook trout are a fussy species that require pristine, free-flowing water. Exemplary conservation and land ethic practices by landowners in the watershed is why these trout survived when those elsewhere did not. That, coupled with the natural geology, recent watershed improvements and further stream work (shown left) makes it Iowa's premiere brook trout fishery.

10 DIRTY DANGEROUS JOBS

DANGER

BY KAREN GRIMES

You have to know science and be astute with computers, but **THIS IS NOT AN OFFICE JOB.**

Those doing field work to enhance Iowa's outdoors are willing to *get hot, cold, perilously off-the-ground and sometimes filthy.*



1 Raw, Wild Night Netting

At Rathbun Lake, Spirit Lake and Storm Lake, about 40 staff take to the early April waters to capture female brood stock and male walleyes. It's a night job, with no lights, running in high winds and waves. Just after ice out, it's freezing cold. Some nights are so dark staff can barely discern between shoreline and skyline. Snow, sharp wind or even tornadoes are additional threats, says **Spirit Lake hatchery manager DONNA MUHM.**

Water temperatures are around 45 degrees—cold enough to take your breath away should you fall in. Each catch means a long, windy boat trip to find and pull gill nets. **JOE LARSCHIED, now the fisheries bureau chief,** plied the waters, walleye netting at Spirit Lake for 16 years. "The walleye are flopping on deck and you are hustling to get them un-netted and into tubs, trying to minimize stress on the fish. You take off your gloves, because you can't feel the fish," he says. "The fast pace and adrenaline rush keep you warm. If the fish are entangled, you cut the nets and sometimes your hands. Many nights your hands are raw as skin freezes to the boat, fish or nets."

Then reset the net, and move to the next one, blowing air on your hands to warm up. In an average night, 20 boats check 50 nets and bring in 1,400 walleye.

"There's only a small window to sample walleyes," Larscheid says. "You have to get them while spawning. We don't want to do anything dangerous, but spring weather is unpredictable. Sometimes you get caught with nets in the water when the weather becomes nasty with waves crashing over the side and ice forming over the gunwales."

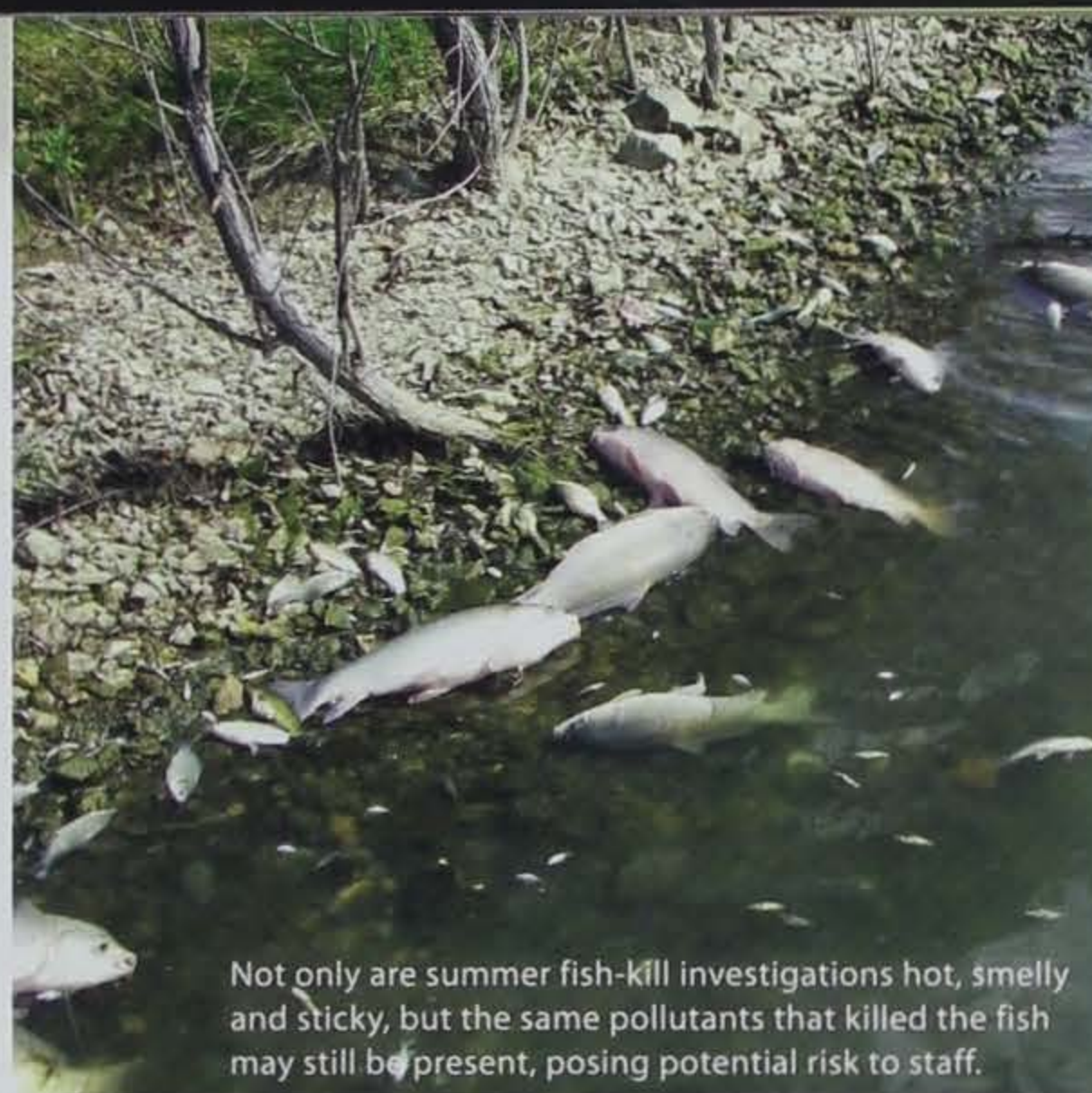
"It's all guts and glory," says Muhm. At the hatchery, females are stripped of eggs, males of sperm—the end result being 1 million walleye fry and some of Iowa's most exciting fishing. The final trip between 2 and 4 a.m. ends at the hatchery, where staff wash fish slime off their hands and share smoked salmon or deer jerky before a starlit, pre-dawn drive home.

2 Fish Kill Investigations

"Neither snow nor rain nor heat nor gloom of night..." The unofficial motto of the U.S. Postal Service could just as easily apply to DNR environmental specialists.

But unlike the local mail carrier, field specialists are on call 24/7 to respond to environmental hazards. With less than one person per county, a big spill can place heavy demands on staff. Facing undetermined hazards ranging from manure spills, train wrecks, fish kills and chemical spills, they work in adverse weather, icy streams, slippery stream banks and against unknown risks of contact with unidentified hazardous substances.

One who thrives on the challenge is **KURT LEVETZOW,**



Not only are summer fish-kill investigations hot, smelly and sticky, but the same pollutants that killed the fish may still be present, posing potential risk to staff.

an environmental specialist in Washington, Iowa. "I actually enjoy going out on some of the spills trying to identify what caused the hazardous situation.

"Venturing into the unknown, you have to step back and look at the big picture," he says. If it's a fish kill, he mentally questions, "What potentially could kill off fish?" Sometimes he can eliminate causes by time of year. When corn is growing, for example, he rules out manure and fertilizer application, favoring fungicide, herbicide or natural conditions. After harvest, liquid manure or anhydrous fertilizer could be suspect.

Using water samples from upstream and down, investigators test for ammonia, dissolved oxygen, acidity and temperature to narrow down causes. Then they find the source and work with the responsible party to stop the pollutant and aid clean up.

The biggest risks beyond fires or explosions are unidentified chemicals.

"Safety is always on our minds," Levetzow says. "We've all taken the Haz-Mat 40-hour course, but we're not a Haz-Mat team. We're out there to identify the source. That usually means we're wading creeks or walking fields to identify the contaminant and its origins. The problem is if you don't know the contamination boundary, you're likely already in the middle of the hot zone."

Training is vital and staff follows safety protocols. In 10 years of tracking spills, Levetzow traces his most dangerous to a call one hot July night. Today he would take more precautions if a farmer asked him to check on an aerial spraying. "At first I didn't think about risk to myself. But they were still spraying while I was in the field."

It was hotter than blue blazes. Walking the creek banks while sweating and rubbing his face, his clothes were soaked. After finding dead crayfish, a species sensitive to pollutants, he knew he'd be back the next day. When he returned, he felt protected in hip boots. His co-worker wore a Tyvek suit to protect against chemicals.

Later water and plant samples verified three chemicals in the stream and fields—toxic to aquatic creatures and dangerous for human contact. "The worst for me was aerial



LEFT: Cleaning up a fish kill during the dog days of summer is back-breaking work, sometimes involving thousands of pounds of fish. In Carter Lake's planned fish kill, workers moved 10,000 pounds of dead fish—twice. **ABOVE:** While the vast majority of hunters are responsible and law abiding, facing armed individuals in sometimes tense situations always remains rooted in the back of a conservation officer's mind. **OPPOSITE:** Navigating frosty stream banks is normal for environmental specialists out to protect Iowa's waters. Weather conditions are no deterrent as they check a wastewater bypass or trucking accident, or search for the cause of a fish kill.

spraying. I didn't know where I could or couldn't walk.

"Now if it's manure, I know it's in a ditch, in a tile, in a creek. We try to keep manure off our hands and clothes, but you know the worst that can happen is you're going to stink," he says. However, it's not hard to find a manure discharge, because it's usually brown, foamy and smells. He walks the creek to rule out other streams, tiles or ditches carrying manure. Testing for manure or fertilizer is easy, too.

But weather conditions aren't always easy. One spring, a landowner had a fish kill in a pond. The farmer upstream had spread turkey manure, and as the ground thawed, manure ran into the pond. Although the water tested positive for ammonia, Levetzow needed lab tests and photo documentation to prove the source was turkey litter. He fell and got some of the cold, wet, smelly stuff on his clothes. "While manure is dirty and smells, I'm not concerned about health and possible long-term effects as I am with chemicals," he says.

The Dirty Road to Better Lakes and Great Fishing

It happens. Some angler has the wrong idea that a few gizzard shad will improve fishing and illegally releases them into a lake or, perhaps, carp and buffalo move up the spillways one spring. Soon a lake is out of biological balance, fishing is poor and tourism and local recreation harmed.

It's time to renovate the lake—the ultimate dirty job. Spraying Rotenone into the water on a hot, July day is grueling. Black hip boots and brown chest waders

become saunas. Sweat drips while poling backwaters, applying chemicals in weedy shallows. Then staff wait until fish start surfacing.

"Fish kills can be dirty and horrendously hard jobs," says **biologist MARK FLAMMANG**, who recently led efforts to kill illegally introduced gizzard shad at Lake Sugema. "You're practically guaranteed to have the hottest day of the year with the highest humidity you can stand."

Nothing smells like sun-soaked decaying fish. "The third day of pickup it gets pretty nasty," he adds. "The fish falls apart between your fingers when you try to pick it up."

"It's smelly and physically demanding," says **fisheries supervisor CHRIS LARSON** who coordinated the renovation of Carter Lake near Council Bluffs.

Carter Lake was extremely murky with lots of algae. Renovation was part of a larger effort to reduce phosphorus levels by adding alum, shoreline protection, wetland development, stormwater basins to catch the runoff from 650,000 people, limited power boating and dredging.

The lake was badly out of balance with rough fish far outnumbering game fish. Carp and buffalo are problematic for water quality. They tear up rooted vegetation and stir up bottom sediments, and compete with native fish for food. Once carp and buffalo are established, algae blooms flourish.

Ten fish crews moved 90 tons of fish in three days last summer and found carp and buffalo made 95 percent of the fish removed. Many weighed 40 pounds. "Imagine that on the end of a 5-foot pitchfork," Larson says. "You have to pick each fish off the shoreline, throw it into a



boat and then lift it out of the boat to haul to a landfill."

Collecting fish is a challenge. Staff searched along seven miles of shore. Each worker handled almost 10,000 pounds of fish twice; once when ferreted out of shallow water and loaded in the boat, again when they were pitched into tractor buckets.

"You are literally standing knee deep in slimy fish in a boat," Larson says. "The smell is overwhelming. My wife had to wash my clothes twice."

Staffers remind themselves to hydrate and force themselves to eat lunch while picking fish scales from their hair. There's a surprising camaraderie as workers share jokes and stories. Laughter helps. Newbies might have the joy of picking fish out of riprap, spines piercing their hands as the sun burns down. By day three, raccoons and the sun have cleaned up small fish. Everyone is exhausted.

Fed by fertile soils and fertilizer runoff, Iowa's lakes are among the most prolific on Earth, producing 650 to 700 pounds of fish per acre. By removing 600-plus pounds of rough fish per acre, water clarity at Carter Lake increased from inches to more than three feet in two days. Despite the odor and labor, as crews ran their boats through the car wash on the way home, staff knew they'd improved the lake and fishery for years.

Approaching Armed Groups

Roughly 80 DNR staff routinely approach groups of armed people. It is inherently dangerous, walking up

alone to a group of 20 deer hunters.

"Dangerous? We all think about it," says **law enforcement supervisor MARK SEDLMAYR**. "It's just something we have to be cognizant of. But we are taught how to approach people, how we talk to people. We don't approach them in an authoritative way most of the time, even though we are the authority," Sedlmayr says.

He's quick to add, "Most hunters are out to enjoy themselves. If they are doing something they're not supposed to be, their main concern is not to get caught, and to hide or stop what they were doing."

Conservation officers start their career with the same training police officers and deputies take at the Law Enforcement Academy. Then DNR officers take a 12-week course tailored to fisheries and wildlife job aspects, like where to look for illegal traps, how to drive pick-ups during a high speed chase and how to approach hunters in a blind.

In 26 years, Sedlmayr has pulled his weapon four times, once in a state park during a burglary. The other times while assisting other law enforcement officers after a high speed chase involving drugs. One of Sedlmayr's officers was threatened with a knife by a guy high on drugs.

Drug users aside, poachers also create risks. Poaching is big business in Iowa where fertile lands yield world class deer. While penalties for poaching trophy deer may be up to \$20,000, the black market price of a deer with antlers that score 200 inches or more may be five times that.

"A lot of people don't understand there's a world market and money in illegal trading for antlers, ginseng and sturgeon eggs or roe," he says. "All of our wildlife



violations are simple misdemeanors. Poaching a world class deer, in the eyes of the court, is the same as running a stop sign. In other states, especially out west, poached big game could be a felony. Many don't know the value of wildlife on the black market."

Despite the danger of facing poachers, the worst job is drowning or hunting accidents. In both, the officer deals with a grieving family. Often hunting accidents involve a person who accidentally shot a family member or friend.

Some officers are trained in critical incidents and help other officers deal with these events. "Some incidents are pretty graphic, pretty gruesome. Six years ago, a toddler drowned. That's tough stuff that burdens you. You have to deal with onlookers, too," says Sedlmayr.

Carp Rodeo

At Clear Lake and Lost Island Lake, "We round carp up, to mark and recapture them later to get a population estimate," says Larscheid. "We need the population estimate to write contracts for commercial fishermen to remove a known quantity of carp, improving the fishery and water quality."

Commercial fishermen use a large net to trap carp in shallow areas of Clear Lake. Fisheries staff waded in to mark fish. It was surprisingly uncomfortable and difficult. "Here you are with your fin clippers, trying to clip a fin while 8- to 10-pound carp hit you in the face," Larscheid says. "Some 40,000 pounds of carp are whirling around in the pen, making your life and keeping your footing difficult."

Finally, biologist Scott Grummer suggested shocking

the carp, a common technique using electrical current to momentarily stun fish.

With staff safely out of the water, Grummer brought the shocker boat in and flipped the switch. "The carp boiled up out of the water like a huge explosion. Then they relaxed, stunned, and our people were able to get in, pick up the fish and clip a fin to mark them for 20 minutes."

"Then, we got everyone out of the water, flipped the switch, and repeated the process."

It worked. Biologists estimated the carp population and let a contract for carp removal. At Lost Island Lake enough fish were removed to keep the population down for years. At Clear Lake, 402 tons were removed in 10 years. Less carp means clearer water with less algae and better fishing.

Environmental Field Inspections

While conservation officers expect to meet people with loaded guns in the field, environmental specialists don't. Still, their job is to aid people in achieving compliance with environmental protection rules to keep Iowa's air, land and water clean. Like police and conservation officers, they sometimes encounter inhospitable people and have stories of potentially dangerous encounters.

Open dumps seem to bring out the worst in people. **BARB LYNCH**, chief of field services and compliance, has been on the job for 32 years. "One time I had a complaint investigation and the sheriff made sure the dump owner was on the other side of the county," she says. "The



OPPOSITE PAGE: Rodeos take on a different meaning when standing knee-deep while rounding up hundreds of agitated carp. ABOVE: While examining days-old summer roadkill isn't pleasant, it provides critical data about the health of bobcat and otter populations.

sheriff took no chances. He still sent an armed officer with me."

Once she drove her small Datsun to a landfill inspection. "I was on foot and the guy on the bulldozer was chasing me," she says. She ran as fast as she could, trying to get to her Datsun before the bulldozer caught up.

In such cases, staff never know how much danger they're in. Lynch jokes she wouldn't have lasted in the job if she'd worked in another state, as most Iowans are decent.

Bobcat and Otter Population Studies

Budding wildlife biologists may think working with animals is warm and fuzzy. But **wildlife technician JIM COFFEY** collects more data from cold and stinky critters. Live animals provide data, but dead animals tell more.

Vulnerable predators need constant monitoring to avoid overharvesting. Biologists use monitoring results to set harvest quotas and keep populations viable. And biologists get downright filthy digging into the dirty world of flat, squishy road kill at dirty job central, the DNR's Chariton Research Station.

Wildlife staff pick maggots off week-old, smashed, slimy carcasses. From teeth they learn age. From uterine scars, reproductive capacity. Combined, these tell biologists if populations are increasing, declining or stable.

More information comes from stomach contents which appear as a pile of fur and liquid. Looking inside, biologists discover eating habits by extracting content and cleaning off the goo. Although every mammal's hair follicles are

different, it's a challenge to look through the microscope and determine what it was before it became lunch.

Getting up close to days-old carcasses reveals data essential for wildlife management. But biologists are willing to share the fun with others. Volunteers and college students thinking of entering the profession often help in the spring during a massive data collection. Animals turned over by trappers or picked up as road kill are collected for this special event. Rubber boots and old clothes are required, because in less than eight hours they weigh, measure, skin and catalogue hundreds of animals.

Testing for Chronic Wasting Disease

Handling a knife at sub-freezing temperatures with a pen light frozen to one's lips can be dangerous, especially with hands that are so cold one can't tell if they're cutting deer muscle or their own. But that's a risk DNR wildlife researchers face to monitor Iowa's first-class deer herd for chronic wasting disease.

Not a glamorous job, it requires removing lymph nodes and brain stems. It doesn't take long for one deer—usually about three or four minutes. But multiply that by 4,000 samples and travel time to complete the DNR's aggressive state-wide monitoring.

Sampling during summer's peak is even more arduous. A call from the DOT leads to a roadside where a biologist needs to collect samples. Three-day-old August road-killed deer tend to have gas buildup and expansion. New biologists quickly learn to stand upwind before the first cut.



BELOW: Smokestack testers face extreme heat and cold conditions on rooftops after first perhaps making extensive climbs past caustic chemicals, molten steel, heavy machinery and other industry hazards. OPPOSITE PAGE: In certain ecosystems—such as those at wildlife refuges—use of drilling rigs is out of the question. Some things—such as digging 20-foot wells—are done by hand.



At night, taking a roadside tissue sample with gawking semi drivers whizzing by at 75 mph adds risks. When a 54-foot semi screams by, it makes a slip of the scalpel easy. Despite training, a few have ended up in the emergency room with cut hands. Fortunately, no one has been hit by a truck.

Hazards in the Sky

They don't wear hard hats, safety glasses and ear protection, steel-toed shoes and sometimes full respirators for nothing. DNR smokestack test observers are exposed to a whole host of hazards as they ensure air pollutants tests are done correctly.

The observer enters every type of industry in Iowa, clambering over and around tangles of high pressure steam pipes, electrical wires, duct work and caustic chemical baths while skirting grinders, shredders, welders, crushers and other working heavy machinery.

Taking a flue gas sample usually requires getting atop a building; maybe climbing a ladder, scaffolding or a catwalk to reach a high platform—not a job for those afraid of heights. The working conditions aren't wonderful either.

"It's basically everything you can imagine," says **stack test observer MARK STONE**. "You go everywhere, see every sort of process you can imagine—rendering, woodworking, foundries, chemical plants, any sort of industry in the state where there are air pollutants."

He might end up spending all night on a roof in January or wearing a Tyvek suit, sweating it out in 105 degrees or more for eight hours. "Some facilities have odd hours, like at one foundry they work 5:30 a.m. to 2:30 p.m., so I worked the same shift."

Some industries are safer than others. Anything involving chemicals or fire is the most dangerous. Plants vary, some having better safety training and more equipment. Observers still face dangers of slipping, tripping, hitting their head, or, less likely fires, explosions or exposure to chemicals or scalding-hot substances.

"The plants work hard to keep people safe," Stone says. "They try to minimize danger. Still, things happen. One guy almost fell off the roof. I've been in places so dusty we looked like old coal miners, all covered in dust when we left."

When Stone started 15 years ago, he was shocked by how many industries are in Iowa and the range of plant conditions. Some plant processes are antiquated. "There are a number of facilities where you hear 'Nobody does it this way anymore.' You go in and see why," he says. For example, one facility makes low carbon steel into high carbon steel parts, dipping steel into a molten cyanide salt bath. Although tests did not show high cyanide fume levels, the plant vacates that area during the operation.

One plant, now out of business, had a process used in only two places worldwide to bake coal at high temperatures. Now only one plant in China does so.

"The worst inspection I've been to was a rendering plant, where everything was coated with a greasy, gooey layer. The place was really dirty," he says.

But a livestock incinerator wasn't so bad. "Probably the worst was a guy working on an experimental incinerator for chickens. It didn't work right, so I got to drive home—four hours—smelling like burnt chicken feathers," Stone laughs. "I got a few stares at the local Casey's store, too."

Four stack test observers average 350 total inspections per year or about 50 percent of the facilities. "With budget cuts,



we can't make it to as many as we used to," he says. "It's not good for facilities, because based on the test results, they can run into other problems. If we could actually go out there, we could help prevent some of the problems."

Digging Deep By Hand

"When you want information, there's a price to be paid," says **DNR geologist KEITH SCHILLING**. For water quality data, that price comes in a patina of sweat and mud, a smattering of blisters and muscle soreness too. The Iowa Geological and Water Survey group has hand-drilled roughly 100 wells at Neil Smith National Wildlife Refuge near Prairie City.

Because of the prairie delicacy, and need to prevent compaction, ruts and tracks, Schilling and his crew of one walk out through chest-high prairie grasses hauling their 6-inch hand auger, 50 pound bags of sand and clay and 20 some feet of pipe. No hydraulic augers on big trucks here.

Often the conditions are wet and hot. When drilling through soil, pulling the auger out every few inches is tough. Suction can build up as mud sticks to the side of the hole.

"It's very dirty, ripping the soil off that sticks to the auger," he says. "You pull the auger out, clean the soil off, then put it back in the hole and turn and turn again. You're covered with dirt and sweat. I've learned to bring along a change of clothes because I'm so much happier on the drive home."

With years of experience, Schilling can hand drill a 6-inch by 20-foot deep hole in two hours. "It's worth the price," he says. Next, he inserts a slotted pipe into the hole and packs sand and clay around it. The slots and sand keep fine-grained soils from the well, allowing water to seep in. Clay placed over the sand keeps surface contamination out.

Then geologists hike to each well, lugging sampling gear to measure water table depth and to check ground water for nitrogen, phosphorus and carbon levels. They are looking at the effects of channelization on groundwater levels, finding that when stream channels are cut deep, that ground water level drops, too.

The result is that areas below ground along the stream are dryer than they should be. "It's dry, dry, dry next to the stream channel," Schilling says, "meaning that the riparian area can't be restored to native vegetation."

When they began the study, both sides of one stream were grown up with reed canarygrass, a water-tolerant cool season grass. Trying to re-establish native sedges and wet meadow grasses on one side of the stream, Schilling's found those plants could succeed in the floodplain, but not when planted within 10 to 20 meters from the stream channel.

"The channel, and groundwater level, has dropped below the rooting depths of those plants, even below the root balls of trees," he says. "To re-establish the native riparian vegetation, we'll have to halt erosion, maybe put in grade stabilization structures, let debris fall in and encourage beaver dams to bring the channel and the water table up."

Deep-cut channels mean all but the largest floods are contained in the stream, running downstream just like a pipe. "If we can bring the water table up and bring the flood into contact with the floodplain, that will allow some uptake of nutrients, the water will move slower reducing flooding and the volume moving downstream."

Six research papers have resulted from the work at Neil Smith National Wildlife Refuge. A price paid in sweat? Yes, but his data makes the price worth it. 🐾



Willow Wranglers

Some see willows as a nuisance species. Others create works of art, garden structures or casual furniture.

BY MINDY KRALICEK PHOTOS BY MINDY KRALICEK AND RYK WEISS

“NO ONE’S EVER SAID NO

when we’ve asked if we can cut sand willow on their property,” says Pam Dennis sprightly. Her partner in life and art, Ryk Weiss, shakes his head in agreement.


Their passion with willow began when a friend visited about 30 years ago. He ran out of money and needed bus fare to get back home. He asked if he could cut some willow on their property to make and sell willow furniture. Weiss said, “Only if you show me how to do it.”

That was the start. Weiss built willow furniture for a while and Dennis branched off into basket-making. They sold their items at farmers’ markets.


Weaving Creativity

Their creativity got the better of them. Dennis began mixing mediums: willow with pottery and, later, copper. Weiss began replicating some of his early willow art in copper. They sold their work at juried art fairs around the country for 25 years, adapting their works to art trends.

As the textures of their art diversified, so did their lines of work. Dennis taught basket making at art centers. They got consignments for art installations at hospitals and colleges; Dennis has been a popular teacher for the Iowa Arts Council’s Arts in Education program. The installation of a willow whale at Reiman Gardens in Ames added to



BELOW: Workshop participants Aprile Kohler and Dawn Wolvek of Des Moines cut willow for their projects.
OPPOSITE: Baskets grown and crafted by Lee Zieke of Willowglen Nursery near Decorah.



A WHALE OF A WILLOW: The Moby Dick Garden Seascape sculpture displayed at Reiman Gardens at Iowa State University in Ames was created and installed by Pam Dennis and Ryk Weiss of Ogden.

their notoriety.

"The problem with living off your own work is that it ruins you for doing anything else," says Weiss. The couple lives simply with a conservation ethic on an acreage north of Ogden in central Iowa. Found things become décor in the garden. Dennis, a horticulturist, tends their vegetable and flower gardens. Willow, indigenous and renewable, is an apt material for their art.

Willow Garden Structures

Lee Zieke in northeast Iowa also has a passion for willow. She and her husband, Lindsay Lee, live on a scenic acreage they call Willowglen between Decorah and Burr Oak, where they offer garden and landscape design services. In 1983 Zieke attended a willow basket-weaving class in Decorah offered by a Wisconsin man. "I knew before the class was over that this was something that was going to be a part of me for a long time," says Zieke.

Zieke started weaving baskets using wild sand willow, but learned that Amana basket makers were growing their own willow for weaving from cuttings brought over from Germany. Zieke started researching European willows, which she learned were more pliable, did not root sucker (which is what makes sand willow so aggressive), and had distinctive colors. She planted her first European willow cuttings in 1988.

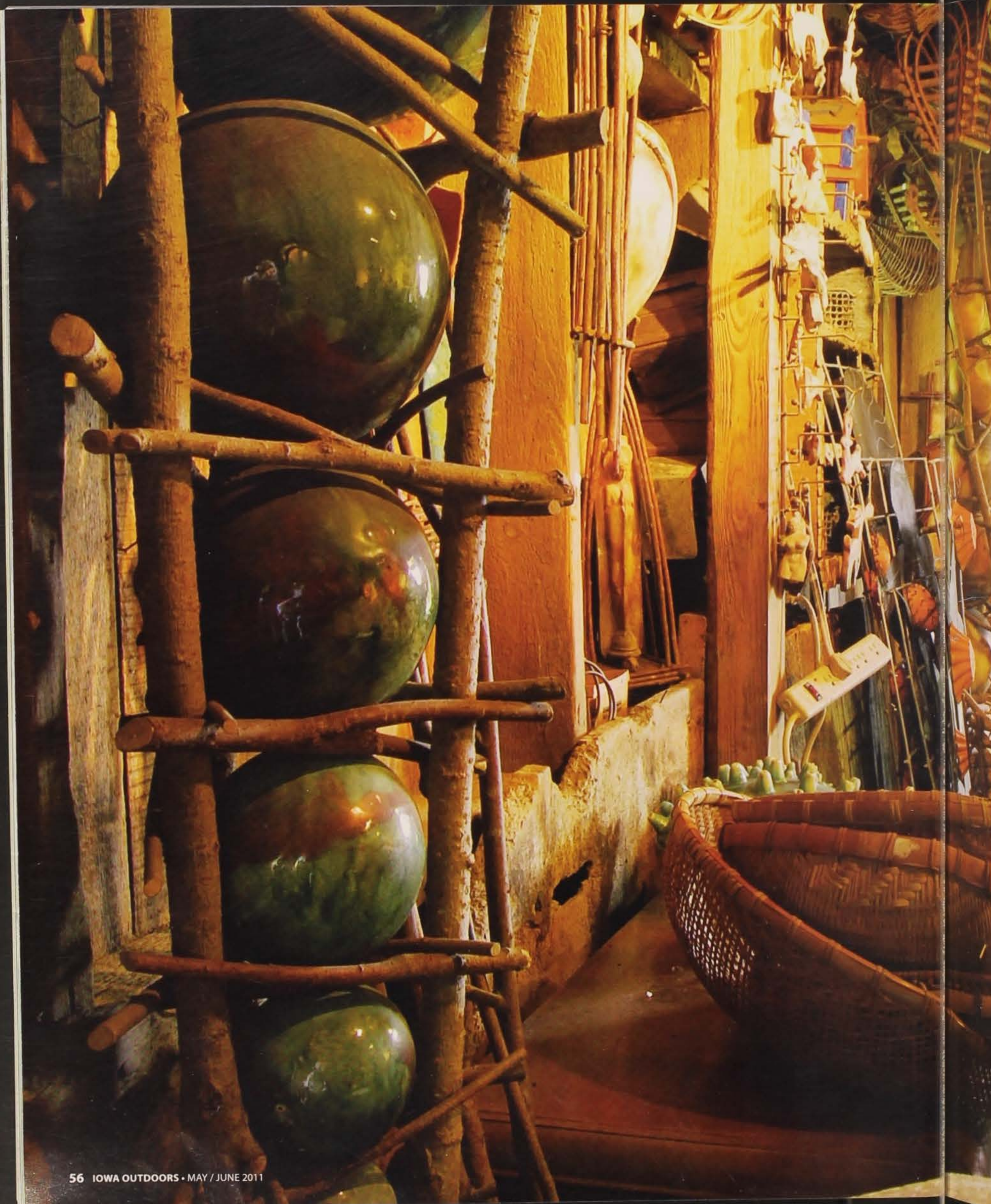
The Stick Merchant

Over the next four years, Zieke planted three patches of willow varieties—6,000 cuttings each time. Some of those patches are now 11 to 15 years old. Her willow patches have expanded into three acres of 10 varieties and sprouted a sideline business for Willowglen: selling cuttings across the country through their business website.

Zieke sells 6- to 8-foot willow rods to weavers, either dry or green, as well as larger-diameter willow that can be used for other purposes. Her willow cuttings are also

Artists Pam Dennis and Ryk Weiss at their studio in rural Ogden. Using 30 years of willow craft experience, the duo offer workshops, teach in schools and sell their popular art works. Weiss, a Humboldt native and musician, has a private recording studio in addition to his work with copper. Dennis has a horticulture background and was the first woman hired to tend the large rose garden behind the Des Moines Art Center in Greenwood Park. BELOW: The bird sculpture is made from willow with copper and ceramic accents.







As folk art became fine art for Pam Dennis, this storage area shows a range of her willow and mixed media work. For workshops, or to buy art, call **515-275-2594**.

Willow furniture making has a history rooted in folk art often associated with gypsies, who would camp and make furniture to use. Always on the go, they'd sell their furniture before departing and make new at their next destination.

used for decorative purposes in the home, and she sells cuttings for others to start willow patches.

"Willow is the perfect renewable source for garden structures. When I see ornaments, structures and supports made out of plastic and wire, I think, 'How can I do this with willow?'" says Zieke.

Her garden structure ideas evolved into workshops and classes for willow plant supports and garden trellises, adding again to Willowglen's list of services.

Of course, Zieke also continues to make custom-made baskets, which can also be ordered through the website. She prefers the traditional "stake and strand" construction which make her garden, shopping and laundry baskets strong and functional. 🐾



Flying bird design as part of the Moby Dick Garden Seascape at Reiman Gardens in Ames. Created by Pam Dennis and Ryk Weiss.



Artist and gardener Lee Zieke's wattle fence was made by weaving willows with rebar. The rebar is buried up to three feet deep and extends six feet skyward. **RIGHT:** Readers can learn to build these trellises by taking a class from Zieke. She and husband Lindsay Lee offer landscaping and garden design, custom-made baskets, willow weaving classes and sell willow cuttings at their home in rural Decorah. Learn more at willowglennursery.com or 563-735-5570. **FAR RIGHT:** Cut willow from various cultivars with varying color can be purchased for projects from Zieke.



WILLOW CUTTING ADVICE:

While willow can be harvested by cutting any time of year to make art projects, it is best cut during the colder months when lowered sap levels decrease brittleness. Remember the willow artist adage, "If it's sappy, it's snappy." The best time to cut willow is December through March.

Horses and Riders sculpture created and installed by Pam Dennis and Ryk Weiss on display at the Blanden Museum in Fort Dodge. The couple is incorporating metals and wire in their large, outdoor murals using willow techniques with long-lasting materials.

Bur Oak Blight

Iowa's economic loss caused by these pests is estimated at \$8 billion over 20 years in urban tree removal costs and \$24 billion for forest landowners and wood products businesses. Energy savings from shade, property value, stormwater retention and carbon sequestration are also diminished.

DEVASTATING THREATS TO TREES

Emerald ash borer

Not since Dutch elm disease are so many threats converging on Iowa trees. Keep an eye out for these four invasive pests to avoid potential disease, widespread damage and extensive costs.

EMERALD ASH BORER



Actual sized adult

This small, green, invasive wood-boring beetle kills ash trees regardless of their health or size, putting 55 million Iowa trees at risk. Under the bark, the grub-like larvae feed on living plant tissue. When EAB destroys an ash, nearly all other ash trees in that city will die in less than six years. Already present in Allamakee County, it will continue spreading across Iowa.

GYPSY MOTH

As a caterpillar, it feeds on leaves, causing defoliation during the growing season, when trees are producing energy. It favors oaks, an important acorn source for birds and mammals—it makes up 54 percent of a deer's yearly diet. Repeated defoliation can lead to tree death. Last year, this moth lived in 31 counties, some in numbers three times higher than the previous year.

THOUSAND CANKERS DISEASE OF BLACK WALNUT (TCD)

As the walnut twig beetle tunnels through a black walnut, it spreads this damaging fungus. Iowa produces the third largest volume of sawlog-size black walnut in the world, an industry placed at risk by TCD. Some experts believe this disease could decimate black walnut trees the same way Dutch elm disease affected elms.



BUR OAK BLIGHT

A common Iowa tree with an important acorn source to wildlife, 32 million Iowa bur oaks are at risk. The fungus blight causes defoliation, leading to branch mortality or tree death. Symptoms include a v-shaped brown discoloration of leaves and browning veins in July and August.

Help Lessen an Outbreak

- 1) For woodlands, keep an appropriate number of trees per acre and maintain species diversity as the best insurance against native and exotic invasive tree threats.
- 2) Watch for signs and symptoms of the big four pests. If you see issues, contact a district forester. Have digital photos of suspect trees ready to help determine if an on-the-ground inspection is warranted.
- 3) Take care of your woods. Follow written management plans developed by a professional forester. Maintain proper spacing, stocking and tree diversity. Overstocked, overgrazed and under-managed woods are more susceptible to all pests.
- 4) Towns should inventory their tree resources and work to create a diverse community forest containing no more than 10 percent of any one species.
- 5) Do not transport firewood, untreated wood products or wood waste. Movement aids the spread of destructive pests. For campfires, use wood purchased at the park.
- 6) Get involved. Advocate protection and care of rural and city tree resources. Learn more about tree diseases at www.iowadnr.gov/forestry/index or the DNR's forest health coordinator, Tivon Feeley, at 515-281-4915.

Gypsy Moth (Caterpillar)



Thousand Cankers Disease





Grilled Stuffed Trout in Vine Leaves

Quick and impressive, grilling fish in grape leaves keeps the flesh moist and flavorful and imparts a fragrant, tangy flavor. For a lighter spin, omit the crab stuffing and fill the fish cavity with lemon slices.

Jarred grape leaves can be found near olives and capers at many grocery stores. Or get on the good side of your area vineyard and ask permission to pick some leaves. Prepare fresh leaves by lightly steaming about 10 minutes until pliable.

CRAB STUFFED TROUT

INGREDIENTS

- 4 whole trout
- 1 jar grape leaves
- Extra-virgin olive oil
- 1 cup canned crabmeat
- ½ cup chopped onion
- ¼ cup butter
- 2 tablespoons flour
- 1 teaspoon oregano
- 1 teaspoon thyme
- ½ cup chopped mushrooms

VINAIGRETTE (1 lemon, tablespoon chopped fresh thyme, salt and pepper, 3 tablespoons extra virgin olive oil)

DIRECTIONS

Sauté onions, mushrooms and flour in butter until golden. Add crabmeat, pepper, oregano and thyme. Season outside and inside of fish with salt and pepper.

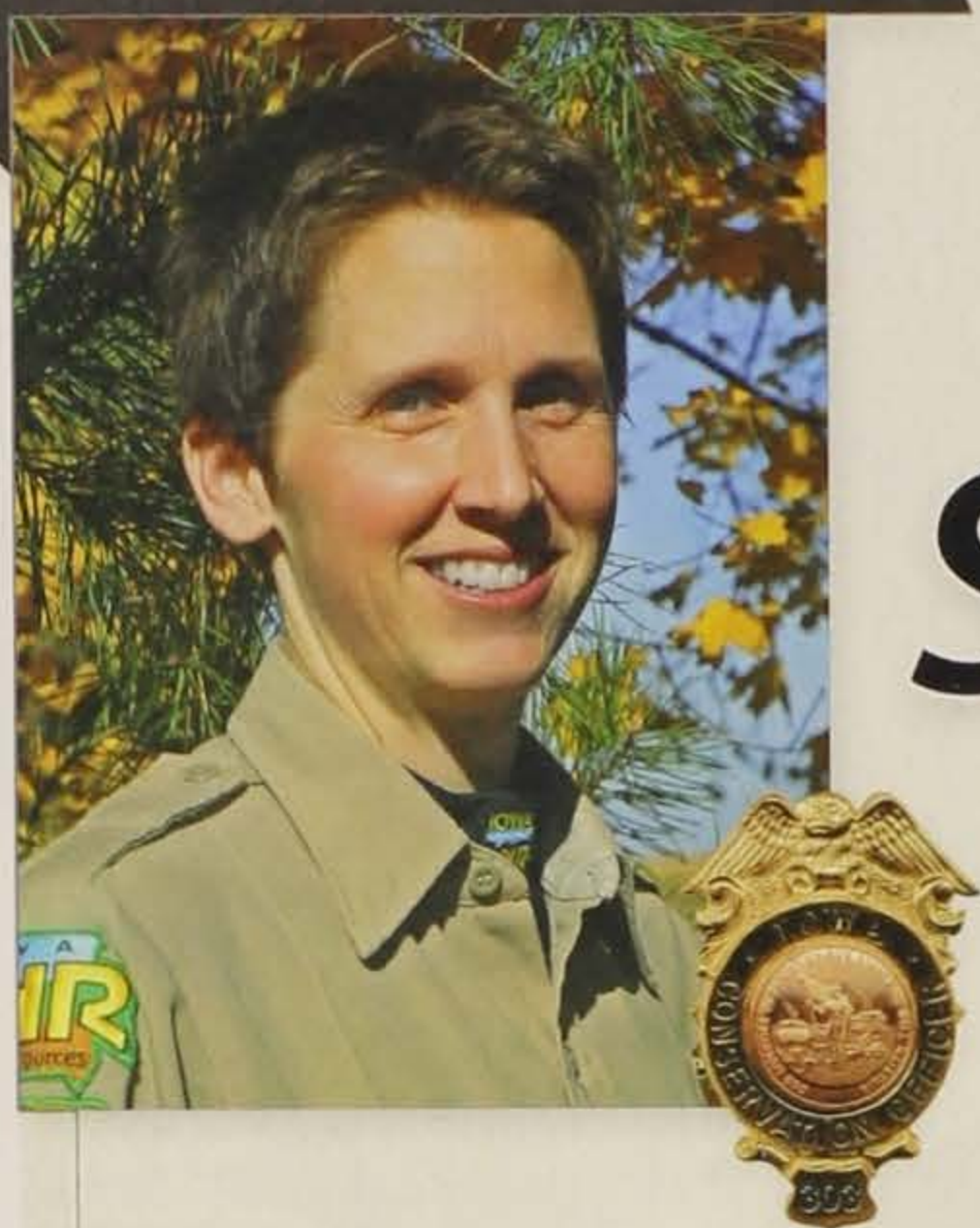
Rinse jarred grape leaves in water and pat dry. Lay three leaves sideways, each slightly overlapping. Lay two more leaves along the edge to make a sheet. Lay a fish across, fill it with stuffing and wrap leaves around the fish. Tie in two or three sections with kitchen twine. Repeat with remaining fish and brush with oil.

Grill about five to seven minutes per side. Let fish rest five minutes off the heat before serving.

For vinaigrette, squeeze lemon juice into a small bowl and stir in thyme, salt and pepper. Whisk the oil to make a dressing. To serve, discard the grape leaves and drizzle each fish with dressing.

Get angling tips and find streams with the foldout map. A bargain at \$2, 866-410-0230 or www.iowanaturestore.com





Spelunking for Eddie

Eddie was in a predicament.

Eddie, a fox terrier, was trapped in a cave by a savage mystery animal.

"Huh? What am I supposed to do about that?" I asked.

"No idea," the dispatcher said flatly. Gee, thanks. Once again, my job seemed to be getting mixed up with that of an animal control officer.

I took down a phone number and dialed with the intention of telling Dale, the dog's owner, that there was nothing I could do. There was no answer. Great. I set off in the direction of his house.

As I pulled into his driveway, Dale approached my truck. I stepped out and just as I opened my mouth to inform him that this kind of thing isn't in my job description, I was stopped short by a piercing bark coming from somewhere behind the house.

Once I heard Eddie's frantic call for help, my resolve melted—I had to rescue Eddie.

We picked our way to the bottom cliff in an old rock quarry. Dale led me to a small opening in the rock wall. I got down on my knees and poked my head into the cave's entrance. Eddie's barking echoed through the darkness, making it difficult to pinpoint his location.

A small ledge looked to be accessible if I removed my gun-belt, sucked in my stomach and scooted forward in a prone position. From there maybe I could see Eddie.

"What makes you think there is an animal in there with Eddie?" I asked, still a little skeptical of his story. Before Dale could answer, I caught a whiff of musky stench, followed by a deep rumbling growl. I took a quick step backwards, nearly knocking Dale over. "Oh. That."

Going inside the cave suddenly became less desirable.

If I crammed myself in there, I would block the exit for whatever was keeping Eddie hostage.

"Can't say I've ever had a call like this before," I said, chuckling uncomfortably.

"I just don't know what to do," Dale said.

Unfortunately, I didn't either. It was time to make some phone calls.

I hiked to my truck to get my cell phone. First I tried an old trapper who has given me advice in the past. No answer. I tried my neighboring officer. No answer. My supervisor? Nope. Next I tried my husband, a DNR wildlife employee. He picked up on the fifth ring.

"Quick question," I said. "I've got a small dog stuck in a cave with an angry animal—likely a badger. Any ideas?"

All I could hear was my son screaming in the background.

"What? I had to put the phone down for a second," he replied, sounding annoyed. The baby was still crying.

"A dog! Dog stuck in a cave with a badger! Need to get the dog out! Think of something!" I said with desperation.

"Huh? I don't know. I can't think right now, he won't stop crying. When are you coming home?" he said.

"Never mind," I said, and hung up, tactfully not reminding him that he was supposed to be an expert in this kind of thing.

I scrolled through my phone contacts and landed on the perfect candidate. Jeff, one of the hunter education instructors in my county, lived only a half mile away. Jeff is a prison guard, a tough guy, and a self-described redneck, so surely he wouldn't be scared of a little old badger. It didn't take much to talk him into helping.

Back at the bottom of the hill, Dale was looking worried.

"I'm not sure if we're making it better or worse," he said. "If we left it alone until dark, do you think the animal would come out?"

"It's certainly possible," I said, thinking this was probably the best idea yet. However, it was apparent by his voice this was the last thing he wanted. I could hardly blame him—I wouldn't have been able to leave my dog either.

"Let's try to think of some other ideas first," Dale said quietly. "What if he is injured and can't get out on his own?"

"OK, let's think," I said.

We came up with a few ideas: pepper spray, throwing a tow rope into the cave to spook the animal out, smoking them out, and finally, running a hose from the house, down the cliff and into the cave to surprise the animal into action with a quick burst of water.

We vetoed every idea. If I used pepper spray, I'd end up getting the spray in my own eyes, therefore not only putting me in the path of the animal, but also blinding myself. The tow rope idea was just lame. We had no smoke bombs. And finally, spraying water into the hole carried the risk of driving them further into the cave. The other major problem with all of the plans was that we weren't certain of Eddie's location. Every time we listened from different spots along the rock wall, the barking seemed to originate from different areas of the cave.

I called Coralville's animal control officer with the hope that she might be privy to some secret knowledge pertaining to dogs being held hostage by badgers in a cave. In the very least, I thought she might have better equipment than my 4-foot catch pole. Unfortunately, she lacked experience with this specific situation. Her advice was to call the better-equipped Iowa City animal control officer.



I hung up feeling frustrated and helpless. Then I looked up, and there, standing at the top of the hill with his arms crossed and smirking like some kind of deranged superhero, was Jeff. Help had finally arrived.

Jeff climbed down the hill and approached the cave, repeating what I had done earlier. Squinting into the darkness he called, "Come on Eddie! Come out of there!" And like earlier, when he asked if we were sure Eddie was alone, his question was answered with a deep growl from inside the cave.

"You think someone should belly crawl in there for a better looksee?" I asked

casually. I hoped he would catch the subliminal message that "someone" was him.

"I don't think you want to meet whatever that is face-to-face, do you?" he asked, completely ignoring my subliminal messages.

"Not really," I answered. I knew if Jeff volunteered, I wouldn't have let him try anyway. My shirt was the only one sporting a badge, so I'm sure that if my "volunteer" contracted rabies, I'd be to blame.

I left Dale and Jeff to think while I called the officer from the Iowa City animal shelter.

"Wow! That's not good," she said. "Badgers are mean."

"Uh huh," I replied.

"So, is the owner really freaking out?" she asked.

"He's worried. I don't blame him though," I said. Listening to Eddie was breaking my heart, and he wasn't even my dog. I cut to the chase and asked her for some advice.

"Have you tried just walking away for a while?" she asked. Not the top secret knowledge I was hoping for. Where do they train these people anyway?

"We are saving that as a last option," I said.

Warden's Diary



She had a few ideas: Use a tazer on the badger...I didn't have a tazer; try to find something to attach to the end of a stick that would allow it to turn a corner... I'm not an engineer; lastly we could call on Monday and she could send a crew to help...my husband would've objected to me working for more than another hour, let alone overnight. I thanked her and hung up.

Our main problem (aside from the clearly miffed animal) was that we didn't know where Eddie was and whether or not he was capable of getting out on his own. "If only we were able to see better," I kept saying. Bingo!

I retrieved a camera from my truck, Dale found some duct tape and Jeff held the catch pole steady. After 15 minutes of precision work, we connected the camera to the end of the pole. By setting the camera timer, I could stick the camera into slits in the rock wall and take photos. I went crazy taking pictures. I snapped off 50 shots, from 50 different angles, and from various entry points. When done, I had 50 different pictures of rock.

Dale was clearly not impressed with my photography skills. He finally decided to call a plumber. Yes, a plumber. The plumber arrived 45 minutes later with his camera in tow. His camera, usually used for "seweroscopies," could be the solution. It needed power though, and we were 80 yards from the nearest outlet. Dale went to the house to scavenge extension cords.

While we were waiting, the plumber wandered to the cave, stooped over and looked inside. Another growl.

"Have you thought about just leaving it alone?" he asked. Silly plumber...who was the wildlife expert here anyway? Of course we had thought of that. As we chatted, the plumber started to get cold feet. He concluded that "there would be too much pull on the line" (I nodded like I had a clue). I cringed when he said he was going to tell Dale he couldn't use the sewer camera.

Dale returned looking more dejected than ever. We were now officially out of ideas. I let Jeff break the news—our only remaining option was to wait it out. I thanked Jeff, and watched my former superhero hike up the hill. I started to follow, but found it difficult to leave Dale sitting on the edge of the hill with Eddie still yipping from inside the earth. I told him I'd return if he had another plan.

"Could I borrow a live trap?" he asked. "If the animal doesn't come out tonight at least maybe I could catch it."

"Sure," I said. I promised to retrieve a live trap from the Coralville animal control officer.

"I'm sorry I couldn't save Eddie," I said, feeling like a giant failure.

"I understand," Dale said quietly.

I left feeling mentally exhausted. More than anything, I wished I could rescue Eddie. It would have been a happy ending. Eddie would've been happy, Dale would've been happy, and I would've felt like a hero. But no.

I drove into town and got the trap from the Coralville animal control officer when my phone rang.

"Guess who just ran into my house?" Dale asked, his voice drenched with relief.

"Eddie?" I asked.

"He's back," he said. "I came back into the house and within 10 minutes he was back. A little shaken up, covered in mud, and missing the tip of an ear, but otherwise OK," Dale said. "Thank you so much for helping."

"I didn't do anything," I said.

"You showed up," he replied.

Sometimes the simplest solution is the best one. Let nature take its course and things will work out. And it's OK to put yourself into someone else's shoes. Sometimes a little empathy goes a long way. Sometimes you are a hero just for showing up. 🐾



Household Hazardous Materials



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Use and store
Dispose of
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Change Our Ways. Change Our World.

EASTERN GRAY TREE FROG (*Hyla versicolor*)

This small frog averages 1.25 to 2 inches in length and can be found in eastern Iowa. Despite its diminutive size, this species exhibits a lion's share of unique abilities and behaviors.

ANYTHING FOR A MEAL

This tree frog is known to go to surprising lengths for a meal. The acrobatic amphibian is noted for its high-flying stunts. In pursuit of their insect prey, the frogs boldly leap from tree branch to tree branch. However, if they aren't feeling nimble enough, the hungry party may search out smaller frogs and resort to cannibalism. They can be found lurking near outdoor lights, using the insect-attracting rays as an all-you-can-eat buffet.

CRYOGENIC CROAKER

The gray tree frog naturally produces glycerol in its body. As seasonal temperatures decrease, the frog burrows underground and glycerol is converted to glucose. The glucose is circulated throughout the small body, acting as an antifreeze to keep ice out of cells. The remaining blood and water in the frog freezes and its heartbeat and breathing stop entirely. The frog spends the winter in this frozen state. When temperatures warm, the frozen frog thaws out.



EXTREME CLIMBING

Eastern gray tree frogs possess the sturdy toe pads characteristic of the Hylidae family. The combination of mucus-producing glands and a low angle between the toe and the climbing surface make for great climbing abilities. Combine these two traits with moisture, and enough surface tension is created to hold the frog's body weight. In the right conditions, these frogs can climb glass windows.

LOOKALIKE FROG

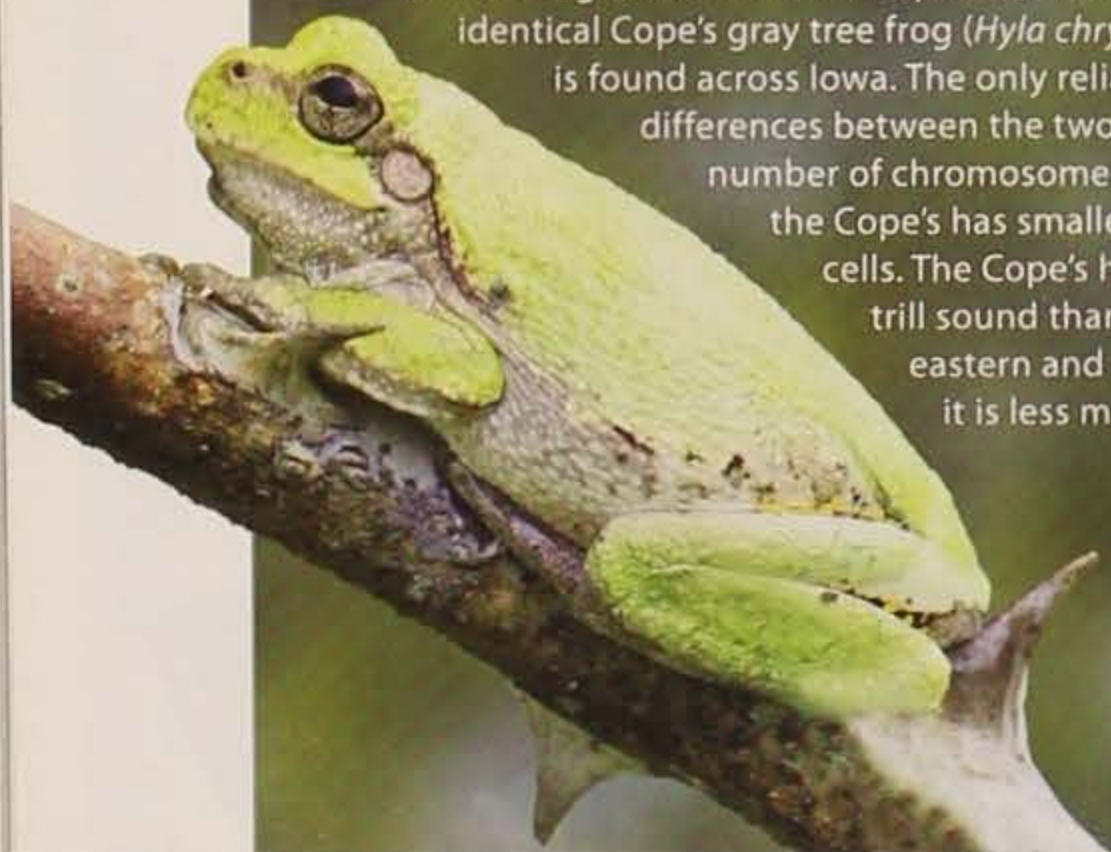
Once thought to be the same species, the nearly identical Cope's gray tree frog (*Hyla chrysoscelis*) is found across Iowa. The only reliable differences between the two is in the number of chromosomes and that the Cope's has smaller blood cells. The Cope's has a faster trill sound than the eastern and some say it is less musical, too.

GET INVOLVED

Amphibian populations are declining globally and are susceptible to environmental changes. You can help monitor frog and toad populations by driving a 15-mile nighttime survey route three times during the summer and recording results. For details, contact the DNR's Stephanie Shepherd at 515-432-2823 ext. 102 or visit iowadnr.gov/wildlife/diversity/frog_toad.html.

CHAMELEON CAMOUFLAGE

This little amphibian is able to change its colors according to its surroundings. It can appear either leafy green or gray like tree bark. What's more impressive is that they can change between the two in a matter of seconds.



PADDLING WITH A PURPOSE

ROBIN FORTNEY, DES MOINES

Des Moines paddler works to reconnect Iowans with rivers

The founder of Central Iowa Paddlers started her inaugural solo float 17 years ago with a one-person kayak fresh from the store and just one night with *The Canoeer's Bible*. Within the first 100 yards, Robin Fortney of Des Moines found herself navigating a narrow chute and s-curve. "I was exhilarated being on the water and in that boat. I could feel everything around me," Fortney says. "You had to be present in the moment. I found that incredibly healing and a whole new way of being," she says. While she started paddling as a physical challenge, she soon valued the sport's natural setting as mentors introduced her to stewardship, a theme reflected in Central Iowa Paddlers and Fortney's other groups. As a founder of Iowa Rivers Revival, Fortney works to reconnect Iowans with their rivers. "If people aren't familiar with the resource, they're not going to care about it," she says. "Very few people are getting kids out on rivers now." Fortney helps with the revival's River Rascals program, which takes kids paddling one-on-one with an adult. She's also a driving force in River Run Garbage Grab, an annual Des Moines river cleanup. "It's more than trash. It's about getting people on the river and having an intimate experience with this resource," Fortney says. A biologist by trade, Fortney also helped found the friends group at Neil Smith National Wildlife Refuge and is an IOWATER volunteer water monitor. "She's really committed to making sure others have access to Iowa's rivers and natural areas and that future generations have the same opportunities she has," says Rosalyn Lehman, executive director of Iowa Rivers Revival.



BIKES GET RECYCLED AT LIBRARY

IOWA CITY BIKE LIBRARY, IOWA CITY

Cyclists work to get Iowa City residents out of cars and on bikes

It might look like Black Friday with the line outside waiting for the doors to open, but here, it's Bike Saturday. People rush in to the Iowa City Bike Library each week, especially in warm weather, to check out a free bike. It started in 2004 when Brian Loring wanted to encourage cycling as transportation, to help people get fit and reduce pollution and traffic congestion. "I wanted to provide an entry point for folks who want to get into cycling," Loring says. "We're trying to provide you with a low-cost, positive experience with cycling." In its first year, the library set up shop at the farmers' market. One customer, Del Holland, sat on the board of Environmental Advocates, a local nonprofit agency—just the partner Loring was looking for. Then in 2005, the city of Iowa City donated retail space, and the library grew from there. Since 2004, it's checked out 1,100 bikes. Only 20 percent come back. Keep the bike at the end of six months and your deposit goes toward buying parts to keep other bikes on the street. "We want people on the bikes," says Holland, also a library volunteer. "All around town I see bikes with our labels on them." Demand continues to outpace supply, so the library is steadily expanding, adding more volunteers and mechanics. All bikes are donated, and those that the library can't use for checkout are stripped for parts, with unusable pieces sent to a metal recycler. The library also regularly gives away bikes and helmets to kids in low-income Iowa City neighborhoods.



A BLOOMING RELATIONSHIP

DAVE AND PAT HANSEN, CLEAR LAKE

A hobby becomes a commitment for Clear Lake couple

The four acres of prairie planted "just for the fun of it" in 1998 by Dave and Pat Hansen of Clear Lake has grown into more than 160 acres of wetlands and prairie protecting the land and the Winnebago River. It started in 1993 when Pat volunteered to collect wildflower seed at Ventura Marsh, introducing her to a community of birding and prairie enthusiasts. They joined the Iowa Prairie Network, where Pat learned the ins and outs of prairies. Dave, who runs the farm his father was born on, knew the soil and farm programs. "We each realized we knew enough to do it on our own," says Pat. In 2005, the Hansens added 12 ponds and prairie on 163 acres through the federal Wetland Reserve Program. "There is a lot of ground farmed that shouldn't be. This is what I can do on my farm," says Dave. A neighbor's cattle grazes the prairie, acting as bison and elk once did, eating non-native plants and spreading prairie seeds. The fruits of the restoration already show. Pat has counted at least 108 different species of native prairie flowers. Hundreds of bobolinks, yellow-headed blackbirds and goldfinches grace the prairie, along with ibises, pheasant and other wildlife. "The most important thing they do is lead by the example of how they handle their land," says Ann Stillman, who also serves on the Iowa Prairie Network board. When the prairie flooded four years ago, the ankle-deep water was gone in a day, while neighbors' cornfields still had standing water two months later. "In two years the land had healed," Pat says.



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